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# Railway Age Gazette

FIRST HALF OF 1916—NO. 5

SIXTY-FIRST YEAR

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showing dangerous  
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# Railway Age Gazette

Volume 60

February 4, 1916

No. 5

## Table of Contents

### EDITORIALS:

|                                                                 |     |
|-----------------------------------------------------------------|-----|
| Mr. Kahn on the Needs of the Railways.....                      | 187 |
| President Wilson at the R. B. A. Dinner.....                    | 187 |
| The Whistle Nuisance in Kansas City.....                        | 187 |
| Efficient State Regulation in Virginia.....                     | 188 |
| Clearance Legislation.....                                      | 188 |
| \$100,000,000 A Year Represents the Public's Sole Interest..... | 189 |
| The Chairman of the Board of Directors.....                     | 189 |

|                 |     |
|-----------------|-----|
| NEW BOOKS ..... | 190 |
|-----------------|-----|

### LETTERS TO EDITOR:

|                                          |     |
|------------------------------------------|-----|
| A New Idea in Publicity; A. Hermany..... | 190 |
|------------------------------------------|-----|

### MISCELLANEOUS:

|                                                     |     |
|-----------------------------------------------------|-----|
| Present Railway Situation in the United States..... | 191 |
| *Canadian Northern Steel-Frame Passenger Cars.....  | 194 |

|                                                                                             |     |
|---------------------------------------------------------------------------------------------|-----|
| The Week in Congress; W. L. Stoddard.....                                                   | 198 |
| The Government and American Railroad Needs; Otto H. Kahn.....                               | 199 |
| *Eastern and Central Time Standards in Ohio and Michigan; Myron E. Wells .....              | 201 |
| *Construction Work on the Paducah & Illinois Railroad.....                                  | 203 |
| Senate Committee Report on Resolution to Investigate Methods of Regulation .....            | 205 |
| A Statement by the Western Railroads on the Wage Demands of the Enginemen and Trainmen..... | 206 |
| Cost of Maintaining Private Sidings.....                                                    | 207 |
| The Railway Business Association Dinner.....                                                | 208 |
| *The Canadian Northern Extension to Vancouver; V. J. Boland.....                            | 210 |
| GENERAL NEWS SECTION.....                                                                   | 213 |

\*Illustrated.

Otto Kahn, of the banking house of Kuhn, Loeb & Co., has contributed to the current number of The World's Work a

#### Mr. Kahn on the Needs of the Railways

very able article entitled, "What American Railroads Need." Mr. Kahn's presentation of the subject is well worth reading, because of its intrinsic merits. It derives additional interest and value from

the fact that it is from the pen of a member of a banking house which is identified with the financial affairs of some of the leading railways in the United States. To some people the fact that Mr. Kahn does business in the Wall street district may seem a reason for treating his views suspiciously, if not lightly. But those who consider business questions from a sane business point of view will not regard the matter in that light. In the first place, the banking house with which Mr. Kahn is identified has always used its influence for increasing the operating efficiency and improving the service of the railways with whose affairs it has concerned itself. In the second place, the most important problem affecting railways which confronts the managements and the public is that of putting the roads in a situation where they will be able to raise adequate capital at a reasonable cost; and the views and judgment on this subject, of a banker of the experience and ability of Mr. Kahn obviously merit great respect and consideration. Fortunately, the time seems to be passing when the public went almost exclusively to the muckraking magazines and demagogic politicians for light on our great business problems. A large part of Mr. Kahn's article is published elsewhere in this issue, and we are sure our readers will find it interesting and illuminating.

President Wilson, in his address before the Railway Business Association on January 27, at New York, paid the association and

#### President Wilson at the R. B. A. Dinner

its guests the high compliment of talking with them frankly and straightforwardly about the subject which was nearest his heart. The President took this opportunity of laying before a

gathering which included the executives of the railways and some of the great supply manufacturing industries, an outline of the program which he is now engaged in explaining to the country. It was a fitting recognition of the nonpartisan patriotism of the association which was well deserved. The manner in which the President's address was received was in turn a tribute both to the high-minded ideals of the President and the clearness and frankness with which they were laid before his hearers. The

President was obviously intensely interested in the attitude of men who represent the management of railroads in every state in the Union and to an unusual extent he made himself one of these businessmen. Coming together for the discussion of a subject which had nothing to do with special interests but which the President believes—and public opinion is obviously with him—is of vital interest to the country's welfare as a whole it was possible for the businessmen and railroad executives to get an understanding of their President and possibly also for the President to get an understanding of the businessmen that would hardly have been possible had the subject under discussion been one which affected directly special interests represented at the dinner. The President in accepting the invitation of the Railway Business Association showed his confidence in the breadth of view of the members of the association and of the high aims of the association itself. It must be admitted that there was some disappointment with the President's speech because he made no reference whatever to the railway problem, even in its relation to the subject of preparedness. But in view of the attitude assumed by him regarding railway matters in his recent message, it would not be fair to construe his address as indicating lack of either information or interest on his part regarding the railway situation.

The common council of Kansas City (Mo.) has amended the ordinance of that city regulating the blowing of locomotive

#### The Whistle Nuisance in Kansas City

whistles and letting off steam by locomotives, so as to prohibit all unnecessary blowing of whistles; the unnecessary letting off of any steam from any locomotive, at or within one hundred feet of any

highway, etc., and providing that "no single blast shall exceed two seconds in length; and not more than five of such signal blasts shall be blown in immediate succession." The common council of Kansas City is to be commended for "getting down to brass tacks." Two seconds is a definite length of time that can be measured. City ordinances cannot accomplish everything, of course; police officers and magistrates do not enjoy the thankless task of enforcing an ordinance of this kind; even if it be enforced, now and then, the remedial effect on the railroad superintendent—who is the man really able to carry out the desired reform—is not always visible; and, finally, the superintendent who actually tries to correct bad practices has a big task on his hands, after the city has ceased its efforts. In short, the city ordinance is not much more than a starting point. But this one is a better

starting point than any other that we recall. Many engineers—almost all of them, apparently—like to sound the whistle three seconds at a time and a good percentage enjoy five seconds. These last seem to think that the highway crossing signal ought to be lengthened to about eight seconds. All these men have watches and they can now reduce their nuisance-producing capacity very simply. Why should not this Kansas City rule be adopted by enginemen everywhere? Why do superintendents have to issue circulars on this subject every now and then?

At Hopewell, Va., near Petersburg, on the Norfolk & Western, the mushroom town built up by the gunpowder industry, there is

**Efficient State  
Regulation  
In Virginia**

a great congestion of freight, chiefly building material, and the State Corporation Commission has authorized the railway company to charge demurrage on cars of bulk freight at the rate of three dollars a day, or three times the regular rate. Consignees were glad to pay the smaller rate indefinitely, and left cars standing on the side track many days; and the railway had to refuse to accept further carload shipments for that station. This incident is mentioned here simply as an illustration of intelligent and prompt state regulation. If all governmental regulation of freight department details could be freed from the intolerable and interminable delays which paralyze enterprise, half of the troubles in this department would be cured. A temporary advance in rates is a proper means of regulation wherever there is a shortage of facilities which is due to legitimate causes, and might well be resorted to oftener than it is. Usually, however, it requires prodigious courage. Hopewell is a new place and probably has no freight bureau with a paid secretary who has nothing to do but to fight day and night for the alleged rights of the downtrodden merchants who wish to use freight cars as retail salesrooms.

#### CLEARANCE LEGISLATION

THE subject of clearances has again been brought to the attention of Congress through the recent introduction in both Houses of a bill providing for a minimum horizontal clearance of three ft., and a minimum vertical clearance of six ft. between any car or locomotive, and any bridge, building or other obstruction, excepting only platforms less than 47 in. above the rail, and the vertical limitations for tunnels. If there must be regulation of clearances, then federal regulation is advisable, if reasonable and practical; for the only alternative is state regulation. Already a number of states have passed laws establishing minimum clearances, and the railroad commissions have issued similar regulations in other states. As a result, California requires a minimum lateral clearance from the center of track of 7.5 ft.; Minnesota, 8 ft., and Illinois proposes 8.5 ft. These facts illustrate the absolute lack of uniformity in state requirements, in spite of the circumstance that equipment and trains move regardless of state lines.

The measure just introduced in Congress has many points of superiority over previous bills of this character. It recognizes the fact that clearance is a relation between the dimensions of equipment and structures, and specifies the distance which must be provided between the two without fixing definitely the dimensions of either, and thereby arbitrarily arresting future development. It also gives the Interstate Commerce Commission authority to extend the time within which structures begun prior to six months after the passage of the act may be brought into conformity with it, thereby making the limits specified in the bill obligatory only as to new construction.

The bill does, however, contain a number of features which, because of their serious effect on the railways, should only be adopted after most mature deliberation. The most important is the clearance specified. The widest bridge clearance diagram adopted by any considerable number of roads provides for 8 ft. from the center of the track, while 7½ ft. is more common,

and the standard of the American Railway Engineering Association, in common with those of many railroads, calls for only 7 ft. Many cars and locomotives exceed 10 ft. in width, none of which could be operated on roads whose structures conform to the maximum clearance diagram providing for a width of 8 ft. from the center of the track. This bill attempts to specify arbitrarily certain dimensions, the practicability of which has not been demonstrated, and the enforcement of which would involve an expenditure of many million dollars. The subject of clearances is too broad and involves too many important conditions to be settled in this off-hand and arbitrary manner. No such legislation should be enacted without a very thorough study of the entire subject and of the effect of any proposed requirements. What should be done is to refer the entire matter to the Interstate Commerce Commission, with instructions to investigate conditions, and authority to fix clearances on the basis of the information disclosed by the commission's investigation.

The purpose of clearance legislation—the protection of human life—is the same as that which prompts the agitation for the extension of block signals, the separation of grades, the construction of steel cars, etc. Railway men will concede that all of these improvements are desirable, but they realize that as a practical matter they cannot be made over night, and that their duty is to distribute the funds available so as to accomplish the greatest results.

By placing the entire matter in the hands of the Interstate Commerce Commission it will be possible for the commission to make a careful study of conditions over the country. This would be necessary even under the bill pending, which authorizes the commission to extend the time within which completed structures may be brought within the requirements of the bill after it has given full hearings on the subject. No one clearance standard can be enforced universally for main and side tracks all over the entire country, for while horizontal and vertical limits of 8 ft. and 21 in., respectively, may be practical and desirable in North Dakota, where the railways are of recent construction, and where there are no congested terminals, such limitations would be entirely impractical in Pennsylvania, where the railways were built many years ago through congested industrial centers. A similar distinction should be made between clearances along high speed main tracks and those in yards where only slow speed movements occur, while the advisability of enforcing liberal overhead clearances for grade separation projects, which in themselves are designed for the public safety, is open to serious question in view of the fact that the enforcement of the limits specified in this bill may make entirely impracticable the carrying out of many projects which would otherwise be feasible. These and other conditions can only be considered properly after a detailed study of local conditions, such as the Interstate Commerce Commission can make. The standards provided in the present bill are not based on any general investigation whatever.

The increasing attention given to the subject by the railway brotherhoods and legislative officers should impress railway managers with the necessity of giving this problem concerted study. At the present time the roads have no standard clearance diagrams for other than third rail and overhead wire construction; neither have they any standard dimensions for equipment. As a result there is no harmony in the design either of structures or of equipment. Likewise the present operating rules of the American Railway Association relative to the handling of equipment place the entire burden of the cost of transferring the contents of cars, such as one series built by a western road, 10 ft. 8¾ in. wide, on roads whose facilities do not permit it to handle such equipment, even though such cars exceed the average, or even the generally accepted maximum dimensions. It is very important that the railways should begin at once to harmonize designs of equipment and structures in this respect, and to adopt rules penalizing roads which exceed the standards adopted.



### \$100,000,000 A YEAR REPRESENTS THE PUBLIC'S SOLE INTEREST

IT is of the greatest importance that the public should be made to understand exactly what the brotherhoods of train service employees are seeking to gain by their movement for the so-called eight-hour day. The brotherhoods are not asking for an eight-hour day for their members. They are not asking for any reduction in the working hours of any class of railway employees whatever. What they are asking for is an increase of \$100,000,000 a year in wages for their particular crafts. Their proposal made in their published demands might be granted without changing the working day of a single railway employee.

Some newspapers are publishing long editorials discussing the proposals of the employees which are based on misinformation. This is especially true of Mr. Hearst's papers. The result of this kind of discussion is merely to darken counsel with words. The public is being told that it ought to favor the demands of the employees because if they were granted, the working day on railways would be reduced, and this would promote the public welfare. Some of the erroneous statements being made are illustrated by the following from an editorial in the Chicago Examiner of January 27: "The issue is an eight-hour day. . . . They now have a ten-hour day and the eight-hour day is only a legitimate demand for the recognition of the standard hours of labor. . . . Public safety and public efficiency unite in demanding an eight-hour day for the working railroad men." The Chicago American on the same day said: "The demand . . . is of grave interest . . . to the general public. Eight hours in the day is long enough. . . ."

The *Railway Age Gazette* challenges any newspaper or person in the United States to point out wherein the demands of the employees provide for an eight-hour day. The leaders of the brotherhoods are so anxious to have their followers understand that they do not contemplate an eight-hour day, that they are giving them such assurances as were contained in an article by Val Fitzpatrick, vice-president of the Brotherhood of Railway Trainmen, which was published in the January issue of the *Railroad Trainman*. "There is quite a difference," said Mr. Fitzpatrick, "between an eight-hour workday and an eight-hour basic workday. The eight-hour basic workday, which is the system proposed by the train service brotherhoods, contemplates that eight hours shall be the basis for a day's work, and any time in excess shall be paid for as overtime. Under such a system there is no limit to the hours that may be worked."

The Chicago Examiner says: "What they are demanding in its essentials is an eight-hour day." But Mr. Fitzpatrick says: "There is quite a difference between an eight-hour workday and an eight-hour basic workday."

Under the eight-hour system in industry every employee works eight hours before he gets a day's wage. Under the "eight-hour basic workday system" on railways proposed by the brotherhoods the employees on passenger trains, who now work less than eight hours, and many of whom work only four or three hours for a day's wage, would not have their working day increased to eight hours. They would continue to have the short hours they now enjoy. Nor would there, under the proposed system, be any limit to the hours that employees in freight service might work except that fixed by the sixteen-hour law. The only difference between the basic ten-hour day system now in effect, and the basic eight-hour system proposed, would be that the employees would receive as much pay for eight hours' work as they now receive for ten hours' work, thus increasing their rate per hour 25 per cent; that their overtime would begin at the end of eight hours instead of ten hours; and that their rate of pay for overtime per hour would be 87½ per cent higher than it is now. As has repeatedly been pointed out in these columns, the number of hours required to run a freight train of a given length between terminals depends on the distance between the terminals; and the distance between terminals cannot be reduced, without, to a large extent, reconstructing our railways. But if the distances between terminals remain

the same under the proposed wage system as they are under the present one, and the length of the freight trains is not reduced, then, necessarily, the number of hours in the working day of the men running between terminals cannot be reduced. The effect of a reduction in the length of trains would be an enormous increase in operating expenses.

Where, then, is this reduction in hours of work per day, in which it is said the public is so much interested, to come in? The proposals of the employees do not contemplate it, and they would be the first to oppose it because the adoption of a real eight-hour day would prevent them from securing the very increases in wages for which they are asking. There would be enormous increases in the amount of wages paid by the railways, but there would be no general advances in the wages of individual employees. The increases in the total wages paid would be due to the necessity of employing more men.

In view of these facts, it is apparent that the public has no interest in any proposed reduction in the working hours of railway labor, because no reduction in their hours has been proposed by anybody authorized to represent them. The public is interested in the proposed increase of \$100,000,000 a year in their wages, because this advance has been demanded by their representatives. The proposed advance would go to working men who are now the highest paid classes of labor in the United States. If the public wants them to have this increase then public sentiment should support their demands; but it should do so with a full recognition of the fact that in the long run the public itself will have to pay the bill.

### THE CHAIRMAN OF THE BOARD OF DIRECTORS

UNTIL a few years ago the office of chairman of the board of directors was either a place on which to shelve a president who was getting too old for the active management of a railroad property and was not willing entirely to lose touch with it or was combined with the office of president to give one man greater power in directing his directors and carrying out these directions. In the case of the late E. H. Harriman this concentration of power in one man was carried to its furthest extent. Nearly all of the constructive power of the board of directors was vested in the executive committee, of which he was chairman; and, holding in addition the office of chairman of the board and of president, he was able to put into effect his own constructive policies almost without interference.

Among the first of the larger companies to adopt an organization in which the chairman of the board of directors had his office in New York, and dictated the larger general policies of the company and managed its financing, while the president had his office at the operating headquarters of the company, was the Chesapeake & Ohio. This arrangement was adopted when Frank Trumbull and his associates bought a controlling stock interest which had previously been turned over by the Pennsylvania to Kuhn, Loeb & Co. After Mr. Harriman's death the Union Pacific and Southern Pacific adopted an organization in which the chairman of the board had his office at New York and the presidents were resident on the property. When the Southern Pacific and Union Pacific became separate systems, with different boards of directors and entirely separate organizations, the chairman of the board of the Union Pacific and the chairman of the board of the Southern Pacific made their offices in New York.

There have been a great many cases in American railroad history in which the actual direction of the larger affairs of the company has been in the hands of one or two men who were directors and in some cases were also the bankers for the company. The New York, New Haven & Hartford's large, unwieldy board could only do business by accepting the dictates of the late J. P. Morgan and by having these dictates carried out by Charles S. Mellen, the president, resident on the property. But the difference between the New Haven's system of executive organization and the prevalent executive organization is that with Mr. Morgan

as the dictator of the company's policy the final constructive authority was exercised by a man who could give but a small fraction of his time to the consideration of the company's needs.

In the Chicago, Rock Island & Pacific case the chairman of the board and the chairman of the executive committee were resident in New York and dictated the financial policy of the company; but here, as in the case of the New Haven, final authority was exercised by men with numerous other interests and without intimate knowledge of practical railroading.

A good example of the present tendency is afforded by the recent election of W. H. Williams as chairman of the board of the reorganized Wabash. W. H. Walters as chairman of the board of the Louisville & Nashville and Atlantic Coast Line; Frank Trumbull as chairman of the board of the Chesapeake & Ohio and Missouri, Kansas & Texas; Julius Kruttschnitt as chairman of the board of the Southern Pacific; Judge Lovett as chairman of the board of the Union Pacific; L. F. Loree as chairman of the board of the Kansas City Southern and president\* of the Delaware & Hudson, are all examples of an executive organization where the chairman of the board has an intimate knowledge of actual railroad management and represents directly, either because of personal ownership of stock or because of holding confidence of controlling stock interest, the owners of the property.

The chief operating officer of a railroad can manage adequately only so many miles of road. The actual number of miles varies, of course, with the individual capacity of the man; but there are very definite physical limitations to the mileage which any one man can operate. If the president can work with his board of directors on the one hand and the company's bankers on the other through a man who understands the language which the operating officer speaks when he talks of the necessity for additions and betterments, he can get his case understood. If, on the other hand, the board of directors can look to advice from a man who understands the financial situation and who is capable of dealing with the bankers, they could quite properly put a confidence in his suggestions which they could not give to an operating man a thousand miles away from the financial center. This intermediate position is represented by the chairman of the board.

With so many railroad properties being reorganized it will be interesting to see whether this form of executive organization is adopted, especially in such cases as the St. Louis & San Francisco and Chicago, Rock Island & Pacific.

### NEW BOOKS

*Maintenance of Way and Structures.* By Wm. P. Williard, assistant professor of Railway Engineering, McGill University. 451 pages, 232 illustrations, 6 in. by 9 in. Bound in cloth. Published by McGraw-Hill Book Company, New York. Price \$4.

This is the third book covering the subject of railway maintenance engineering to appear within the last three months, and being the largest of the three, it contains the most comprehensive treatment. In handling a subject of so large a scope the selection of material for use in the space available requires the exercise of most careful judgment, and this has been done admirably in this book. The three chapters covering the subject of ties and one on track fastenings deserve special commendation. The chapter on stresses in tracks is treated as well as is possible with a subject concerning which so little is known. The chapter on the work of the maintenance of way department, covering 20 pages, and that on the annual program, including 7 pages, comprise the space devoted to labor and methods. The author is obviously a close student of current literature on railway maintenance, and particularly of the proceedings of the American Railway Engineering Association, to which he gives ample credit in the preface. The illustrations are almost entirely drawings, with few photographs, and are exceptionally good.

\* Although Mr. Loree has the title of president, the authority which he exercises over the affairs of the company is analogous to the other instances cited.

## Letters to the Editor

### A NEW IDEA IN PUBLICITY

Chicago, Ill.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Since the publication of the award in the wage arbitration case, numerous items have appeared in the press with respect to the demands in process of formulation by the different railway brotherhoods. One of the principal officers of the Brotherhood of Locomotive Firemen and Enginemen is reported as saying: "This time there will be no arbitration; if we do not get what we want we will walk out."

The conditions which would result from a general suspension of railway service over a large area are such that the outcome would not depend on the capacity for endurance of either party to the controversy; the people would not let it go that far. The public interest would demand a speedy settlement. Obviously the public should be in a position to pass intelligent judgment on the issue, should it arise. Hence prudence suggests that instead of the railways at the eleventh hour gathering with feverish haste a lot of incomplete and ill-digested data for emergency use, they begin now to disseminate instructive information. A true statement of facts should do more to moderate any possible demands of the brotherhoods, and to make a general strike impossible, than anything else. I mean a statement showing the remuneration which the members of the disaffected orders are now receiving for their services.

An expenditure of a few hundred dollars each month would permit of printing and posting in every station of each operating division, of even a large system, a list of the wages paid to enginemen and trainmen on that division. Such a list, carefully compiled and showing that the original was duly sworn to by the compiler, if posted within a few days after the close of the month which it covered, would be sure to attract public attention. If deemed necessary, the field of publicity could be enlarged by also publishing the list in one of the daily papers. Such a list should show under each of the four occupations (engineers, firemen, conductors and brakemen) (1) the name of the employee, (2) total pay for month, (3) number of days on duty, (4) number of hours on duty, (5) amount paid per day, and (6) amount paid per hour.

The object attained by such lists would be twofold—first, a conveyance to the public of incontrovertible data on which to formulate judgment on the possible demands of the orders in question, and, secondly, it would make plain to young men the relatively high pay which these occupations offer, in comparison with other occupations requiring about the same education and amount of vocational training.

A. HERMANY.

THE LEIPZIG-BERLIN CANAL.—Despite the war work has been in progress on the Leipzig-Berlin canal, although this is not as yet in an advanced stage. The Canal Association hopes, however, that the work will be completed "soon after the conclusion of peace"—a definite date for which is not hazarded. The canal, as at present planned, is to consist of four main divisions: Leipzig to Eilenburg; part of the river Mulde turned into a canal; the Mulde to the Elbe; and the Elbe to the Elster and the Havel, a distance of 84 miles in all. The cost of constructing this canal is estimated at \$15,000,000, while it is further estimated that the upkeep and management when the canal is in operation will cost about \$200,000 annually. Besides the ports and wharves at the most important places, 11 locks, 13 railway bridges and 76 bridges over thoroughfares will have to be made. The Prussian and Saxon governments, the communes interested and the manufacturers and farmers affected are all contributing to the cost of this undertaking. The canal will be able to accommodate ships of 600 tons burden.



# Present Railway Situation in the United States

## Significance of Recent Statistics Regarding Reduced Development and Increased Gross and Net Earnings

The railway situation ought always to be a subject of great concern to the people of this country. No other country is so dependent on transportation for its prosperity and development. For some years the conditions in our railway industry have caused much apprehension on the part of those most closely identified with it. Net earnings have tended downward. New capital has been harder and harder to raise. In October last it was announced that there were more miles of railway in the hands of receivers than ever before. At the end of the year it was shown that the new mileage built during 1915 was less than in any year since the Civil War, and, with the exception of three years during that war, less than since 1848. It was also shown that the number of locomotives and cars ordered in 1915 was the least, excepting in two years, since 1900; and the bulk of the orders given was placed very late in the year. These and many other signs indicated that the railway industry was not prosperous and that facilities of transportation were not being improved and increased at a rate healthy or satisfactory.

But at the very time these statistics were being compiled and published others of an opposite character also were being compiled and published. These show that during the last half of the calendar year 1915 the gross and the net earnings of the railways as a whole were very large and probably broke all records. The increases in net earnings were especially great, in some months on some systems surpassing the most ambitious dreams of their managements.

These statistics, seemingly depicting, on the one hand, a condition of extreme adversity, and, on the other hand, one of great prosperity, are well adapted to cause the most conflicting opinions to be formed regarding the situation of our railways. Their managers have been declaring for some years that between the devil of increasing expenses and taxes, and the deep sea of unwise and hostile regulation, the roads were being ruined, with consequent effects on the welfare of the public of the most injurious character. One class of the statistics referred to seem to support this view.

Other persons have maintained that the railways have only been suffering their share from a general business depression along with other business interests, and that with the return of general prosperity they would prosper as much in proportion as other concerns. The statistics showing the earnings of recent months appear to support this view. Which theory should the public accept and act upon?

It is never safe to take statistics for any brief time, whether good or bad, and draw from them broad conclusions as to what the railway situation is even at that particular time, much less as to what it has been during any considerable period in the past or is going to be during any considerable period in the future. The important question always is as to what are the broad, general, potent tendencies in the industry. The situation at some particular moment, if such tendencies be disregarded, may seem very bad or very good, but if there are great forces at work which, unless their influence be counteracted, are sufficiently powerful to determine results over long periods, then, regardless of superficial appearances, the railway situation must be considered bad or good according to whether the prevailing tendencies are bad or good.

If we glance back over the last ten years we can easily discern a number of powerful forces which have been operating in the railway field, and also the results which they have been producing. In the eight or ten years prior to 1906 the growth of traffic and earnings was greater in proportion than the increases in capital investment and operating expenses and

taxes, and, in consequence, there was a large and rapid increase in net earnings and net return. Beginning in 1906 some new forces began to make themselves felt, and some old ones began to operate with increased power. The next year the total annual compensation of railway employees for the first time exceeded one billion dollars. The increases in wages have continued from then to now. Between 1906 and 1914 the increase in the total number of employees was only 11 per cent, while the increase in the total compensation paid to them was 52 per cent. If labor had been rewarded at the same average rate in 1914 as in 1906 the amount of wages received by it in 1914 would have been almost \$340,000,000 less than it actually was. During the same eight years taxes increased \$66,000,000 the rate of increase being three times as great as the rate of increase in total earnings. Meantime a large amount of federal and state regulation was passed which also tended to increase expenses.

Most of these increases in wages were awarded by arbitration boards organized under federal law. All the increases in taxes were made by public authorities. What, meantime, was being done to offset these increases in expenses? So far as the public authorities were concerned, they were doing almost nothing to offset them. On the contrary, they were vying with one another in reducing rates, from which return on investment, as well as these increasing wages and taxes, must be paid. Recently some advances in rates have been allowed, but neither the average freight nor the average passenger rate is as high now as ten years ago. In addition, the Interstate Commerce Commission made sweeping reductions in express rates, about one-half of the effects of which was suffered by the railways. Finally, the government has largely increased the services exacted from the railways in the transportation of the mails, without proportionately increasing the payment for the service. The total revenues of the postoffice department are the best available measure of the amount of mail traffic transported by the railways, since very much the greater part of all the mail is handled at one time or another by them. During the last fifteen years the total revenues of the department have increased 181 per cent and its total expenses, excepting railway mail pay, have increased 239 per cent, while railway mail pay has increased only 60 per cent.

It is evident that without wonderful increases in the efficiency and economy of railway operation the resultant of the play of these forces, some tending greatly to increase expenses and taxes, and others to reduce earnings, would necessarily be a heavy reduction in the net return of the companies. As a matter of fact, there were great increases in the efficiency and economy of operation. But, in spite of all these, between 1906 and 1914 the increase in total railway earnings in the country was only 31 per cent, while the increase in total operating expenses and taxes was 45 per cent. In consequence, while between 1906 and 1914 the average investment in road and equipment increased almost \$12,000 per mile, the average operating income available with which to pay a return on investment, to make betterments, etc., declined \$339 per mile. Even in 1913, when the total earnings of the railways reached their maximum, the percentage of net return on investment showed a substantial reduction as compared with that of seven years before.

The forces and tendencies that have been mentioned explain the large mileage that is in the hands of receivers, the small purchases of new equipment until within recent months, and the almost complete cessation of the construction of new lines.

But how are we to explain and interpret the large increases in gross and net earnings which have occurred within recent months? Do they indicate that the forces which have been in

operation and the tendencies to which they have given rise have been arrested, and that we may believe that in future the railways are going to be highly prosperous?

The reasons for the large increases in gross earnings are tolerably plain. The sudden development of the large war munitions manufacturing industry, principally in eastern territory, started the movement of an immense traffic consisting of fuel and raw materials going to the mills and of finished products leaving them for export. The development of these manufactures has given employment to many thousands of people who thereby have been enabled to buy and consume more goods of all kinds, which, in turn, have caused an increase in industrial activity in other lines. The closing of the Panama canal made it necessary to ship to and from the Pacific coast by rail large quantities of commodities which otherwise would have moved by water, thereby giving a largely increased business to numerous railways which were not in a position to profit much by the handling of munitions traffic. Crops more bountiful than usual had to be carried. Recently, also, there have been some important advances of interstate rates.

This greatly increased traffic, some of it carried at advanced rates, came to the railways at a time when they were especially well situated to handle it economically. By the most strenuous and unremitting exertions over a long period their managers had succeeded in getting operating expenses down to the lowest possible basis. It happened that from the time when the increase in traffic became especially noticeable last summer until well into December the weather conditions all over the country were almost unprecedentedly favorable to economical operation. There was almost no snow or ice to interfere with the handling of trains and almost no severe cold to prevent engines from steaming well.

This general view suggests the conclusion that the large net earnings of recent months are attributable partly to a heavy increase in traffic, in a much smaller measure to recent increases in rates, and in a large measure to the successful efforts of the managements to reduce and keep down operating expenses.

These conclusions are fully supported by the monthly statistics of earnings and expenses. If comparisons be made only between the statistics for the fall and early winter months of 1914 and 1915 the advances in both gross and net earnings seem, and, indeed, were, very large. In September, October and November gross earnings per mile were 15 per cent greater and net earnings per mile 38 per cent greater than in the same months of 1914. But such comparisons are comparatively uninteresting because the traffic in the latter part of the calendar year 1914 was the smallest handled since soon after the panic of 1907, while the traffic in the same months of the year is the largest ever known.

It is much more instructive to compare the statistics for the fall months of 1915 with those for the fall months of 1912, when the railways last handled a big business. Those months were included in the fiscal year which ended on June 30, 1913, and in that fiscal year, while the total business handled was the largest up to that time, the ratio of net return on property investment was less than it was in 1906. The comparison suggested shows that in the three months of September, October and November, 1915, the net earnings of the railways per mile were \$1,488, or \$159 greater than in the corresponding months of 1912, an advance of 12 per cent. It also shows that part of this increase in net earnings was due to an increase in gross earnings, the total earnings per mile in the three months being \$3,877, or \$69 per mile more than in 1912. But the larger part of the increase in net earnings is found to be due to a reduction in operating expenses, these being for the three months \$2,389 per mile, or \$90 per mile less than in the corresponding months of 1912. It is impossible with the statistics immediately available to ascertain exactly how much of the saving in expenses is assignable to each of the operating accounts. The incomplete statistics at hand show, however, that there were increases in all classes of

operating expenses, except in maintenance of way and structures and conducting transportation; and that of the savings, about one-third were made in maintenance of way and two-thirds in conducting transportation.

Now, having in mind the sources of the large increase in railway net earnings, the question arises, how much of these increases can we reasonably expect to be permanent? A substantial part of the increase in total earnings is due to the sudden development of the large war munitions industry, and it is most significant that most of the companies which are largely engaged in the manufacture of munitions are concerns which were established and built up mainly to make equipment and supplies for railways and which under normal conditions are dependent chiefly on the railways for their business. It was long contended that one of the reasons why the business depression continued was that the net return of the railways was declining; that, in consequence, they were narrowly restricting their purchases, and that this was harmfully affecting business in all lines. The revival of general business, unheralded by any marked revival of railway purchases, may appear a refutation of this argument. As a matter of fact, it supports it. The revival of business, owing to the large purchases of munitions of war, began mainly in exactly the same industries where it would have begun if there had been a large increase in railway orders for supplies and equipment; industries which previously were languishing from want of railway orders. The effects on general business would have been the same if the orders had come from the railways of the United States instead of from the warring governments of Europe; with this difference, that revival of purchases by the railways, if caused by the fact that the railways had got on a sound basis, would have caused a less spectacular but a more permanent and healthy increase in the business of many of the largest concerns now making war munitions. The plants which ordinarily manufacture railway equipment and supplies are now so congested with war business that it is impossible for the railways to get filled the orders which they are prepared to place.

The war will not continue forever. When it ends the concerns making war munitions will lose most of this business. If the railways could then come in and take the places of the customers they had lost the results would be good for all concerned, including the general public. If the earnings and expenses of the railways could be kept on a favorable basis this undoubtedly would occur. If they or some other class of customers should not replace the purchasers of war munitions there would be a decline in the business of the concerns now making war munitions. Directly and indirectly this would cause a reduction in railway traffic and earnings. Just how seriously this would affect the railways can only be conjectured. The fact is, that while their total earnings during the latter part of the calendar year 1915 were 15 or 20 per cent more than in 1914, they were less than two per cent more than in the same part of 1912.

However, there appears little room for question that our general business is in a much better condition than before the war in Europe began; and it may be that a cessation of the war would have no harmful effects and might have good effects on it. One who recalls how wide of the mark were most of the predictions made when the war began as to the economic effects it would produce is likely to hesitate to offer prognostications as to the economic results which will follow its close. The main point to which we wish to call attention is that the traffic and gross earnings of the railways, while much larger than in 1914, are not very much larger than in 1912, and that therefore unfavorable developments in politics or general business might wipe out the advances over 1912 that have been made.

Turning to the savings that have been effected in operating expenses, it is obvious that some of them cannot be permanent. It is not encouraging to find that total expenditures for maintenance of way and structures in September, October and No-



vember, 1915, were not only less than last year, but less than in 1912. These reductions may be partly due to increased efficiency, but they are chiefly due to deferred maintenance. The reduction in transportation expenses, which is two-thirds of the total reduction, is an actual saving and is mostly due to greater efficiency resulting from large increases in average trainloads. The saving which has been effected by these increases in trainloads is very great; and they are much the most important means that the railway managements have been able to use to offset the increases in wages. The advance in wages have been the largest in the train service, and if the managements had not by increasing trainloads restricted increases in the number of freight trains run, the advances in operating expenses would have been enormous, indeed. The experience of recent years indicates that still further large increases in trainloads can be accomplished if there is no interference by regulating authorities with this most potent means of effecting economies.

One is bound, in view of all these facts, to take a more optimistic view of the railway situation than it has been possible to take for some years. The cessation of agitation for extensive reductions in rates and the granting of important advances in them in some instances are not only of direct value in themselves, but indicate an attitude on the part of the public and the regulating authorities which is highly encouraging. The same thing may be said of the decline in recent years in the amount of regulation tending to increase expenses. The adverse conditions of recent years have served a good purpose in showing railway officers that greater economies could be made than perhaps even the most optimistic and enterprising of them considered possible. This should, and doubtless will, prove a powerful incentive to continue to put forth great efforts to increase the economy of operation, for a dollar actually saved in operating expenses is worth much more to a railway than a dollar in increased rates taken from a reluctant public.

But the situation has another side, and it must be looked at. While the railways are enjoying a substantial increase in prosperity, the public is being given an exaggerated idea of the real measure of it. We know from experience that when the public gets an exaggerated idea regarding the amount of money the roads are making it is not likely to continue to look with favor on increases in rates and may begin to countenance unreasonable action affecting not only rates, but also wages and taxes. Furthermore, and most important in this connection, the train service employees are beginning a movement for what is called an "eight-hour day." They are not really asking for an eight-hour day, but for further very large increases in wages, estimated at \$95,000,000 a year. If the principles and rates of pay for which these employees are contending were applied, it is difficult to see how reductions in hours of work and increases in the rates of pay of practically all other classes of railway employees could be avoided.

Reference already has been made to the increases aggregating approximately \$340,000,000 per year which were made in wages between 1906 and 1914. While these increases in wages, accompanied by increases in taxes and reductions in rates, were in progress, beginning in 1906, the railways regularly had two years of poor net earnings to each year of good net earnings. The fiscal year 1907 was a good year, and 1908 and 1909 were poor years; 1910 was a good year, and 1911 and 1912 were poor years; 1913 was a good year, and 1914 and 1915—I am still referring to fiscal years—were poor years. The statistics of the Interstate Commerce Commission show that from 1906 on no matter how large the increase in total earnings were the increases in expenses and taxes always soon overtook and passed them.

It must also be borne in mind that the investment in road and equipment is now larger than ever before; that the rate of return which must be paid on railway capital is steadily increasing; and that, therefore, the net earnings required to put and keep the roads on a sound financial basis are vastly larger than ever before. Furthermore, in order to provide adequate and satis-

factory facilities, there must be a further large increase in investment on which also a return must be paid. The net earnings per mile of the railways in September, October and November, 1915, were 12 per cent greater than in the same months of 1912. Even if that rate of increase were maintained throughout the fiscal year, the net return earned on the present property investment of all lines probably would not exceed 6 per cent. Now, it is well known that while there has been no general car shortage, but only local shortages, the facilities of the railways have been taxed to the very utmost in handling the large traffic of recent months. If it be a fact, as we all hope it is, that general and abiding prosperity has returned, we must be warned by past experience that the growth of traffic has only begun, and that the roads must be prepared to handle for some years a very rapidly increasing business. To do this they must provide larger and better facilities. This will require an immense investment of new capital, on which a high rate of return must be paid; and net earnings must be large enough to pay a return on it.

In view of all these facts it is evident that while the railways are very prosperous now it would not be difficult for their prosperity to be turned into adversity by a continuance, unabated, of the operation of the forces which were determining tendencies in the railway field up to about six months ago. In other words, a renewal of the policy, on the part of legislatures, railway commissions and arbitration boards, of causing extensive reductions in rates and refusing advance, of making large increases in taxes, of imposing constantly increasing numbers of legislative requirements, and of granting large increases in wages, would soon convert the railway business again from one of increasing to one of diminishing net returns. In public discussions the railways long have been classed with public utilities; and these discussions often have proceeded on the assumption that it is possible to anticipate what their earnings will be, and to fix some arbitrary rate of net return which they should be allowed to earn. But experience has shown, and no experience more strikingly than that of the last two years, that railways differ widely from practically all concerns engaged in a public service in one most important respect. The gross earnings of most public service corporations usually do not vary greatly from year to year but show a pretty steady tendency in one direction or another. On the other hand, the gross earnings of railways, immediately affected, as they are, by every change in conditions in any line of business, agricultural, commercial or industrial, fluctuate enormously, the variations from fiscal year to fiscal year having been as much as \$200,000,000, which is equivalent to 60 per cent of the largest amount of dividends they ever paid in a year. This makes it dangerous to judge of their situation by the figures of any particular year and renders it especially essential that in fat years they shall be allowed to earn large surpluses both to help provide new facilities and to tide them over the lean years which always are sure to come.

The future of the railways will be determined mainly by the attitude of the public in reference to the various questions affecting them which are pending now and which must be dealt with in one way or another. Will the public favor the immense increases in wages which are being sought? Then the public must prepare to foot the bill in one way or another. Will it countenance a continuance of the present restrictive and burdensome policy of regulation, especially on the part of the states? We believe that the public, and the leaders of public thought and public affairs, have a better understanding of the railway situation today than they ever had before, and that we may as confidently base a feeling of optimism on this as on the recent great improvement in railway earnings.

CHINESE RAILWAY BRIDGES.—A contract for bridges on the Hankow-Ichang Railway (German section) of the Han-Yueh-Chuan Railways has been awarded to the Yangtze Engineering Company (Ltd.), Hankow, a Chinese firm, at a price of \$77,103 gold.

# Canadian Northern Steel Frame Passenger Cars

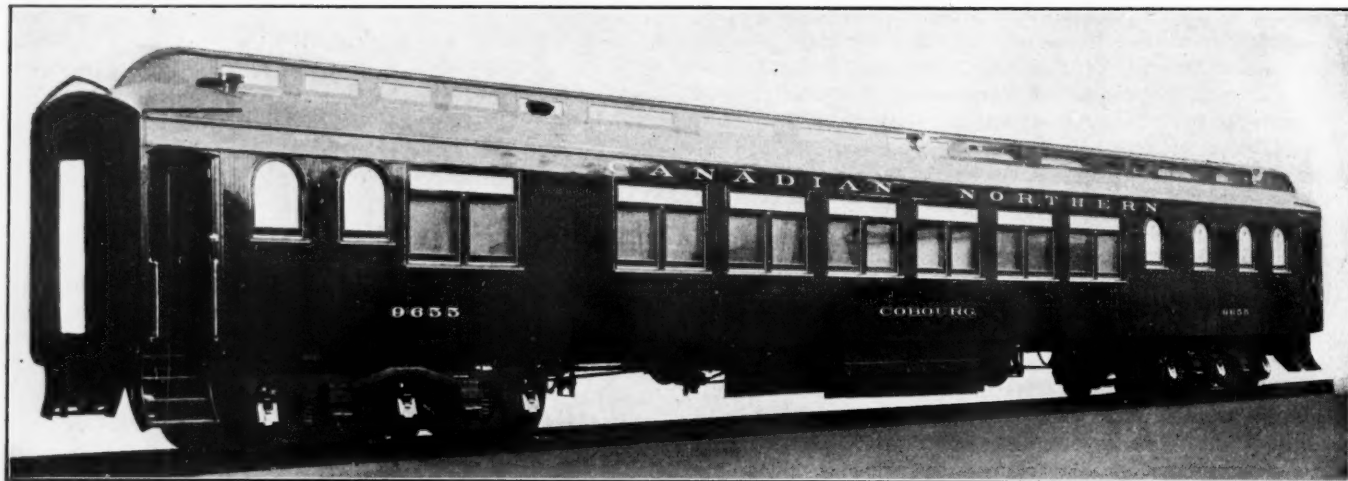
Cars of All Classes Have Steel Underframes and Body  
Frames with Wood Finish; For Transcontinental Service

The Canadian Northern has placed 78 new passenger cars in transcontinental service during the past year. These cars were built by the Canadian Car & Foundry Company at its Amherst, N. S., and Turcot (Montreal) works, the National Steel Car Company, Hamilton, Ont., the Crossen Car Company, Cobourg, Ont., and the Preston Car & Coach Company, Preston, Ont., and include baggage cars, postal cars, coaches, dining cars and several classes of sleeping cars.

All of the classes are of a similar type of construction, having steel underframes and body frames with wood interior and exterior finish. The cars are all 72 ft. 6 in. long over the body end frames, have a width over the sheathing of 10 ft., and are all provided with six-wheel steel frame trucks. The light weight

which the Canadian Northern operates are especially severe. Extremely low temperatures accompanied by high winds are often encountered on parts of the line, requiring a construction possessing the highest heat insulating properties. This consideration makes desirable the use of wood for interior and exterior finish.

A feature of especial interest in the postal cars is a skylight which is placed in the roof of the upper deck. This considerably improves the lighting of the interior under daylight conditions. An opening 2 ft. 9 in. wide by 2 ft. long in the roof of the car is fitted with a light metal casing and closed with two panels of  $\frac{3}{8}$ -in. rough wired glass. The glass rests in a  $2\frac{1}{2}$ -in. by 3-in. wood support on the longitudinal center line of the roof, and



Canadian Northern Standard 12—Section Drawing Room Sleeper

of the equipment is as follows: postal cars, 137,400 lb.; baggage cars, 131,000 lb.; day coaches, 140,000 lb.; 18-section colonist sleepers, 147,100 lb.; 14-section tourist sleepers, 153,000 lb.; 12-section drawing room sleepers, 154,000 lb.; observation-buffet-compartment sleepers, 155,000 lb., and the 8-section stateroom-drawing-room sleepers, 155,000 lb. The coaches have a seating capacity of 84 for the second-class and 78 for the first-class and the observation room of the observation sleepers will seat 25 persons.

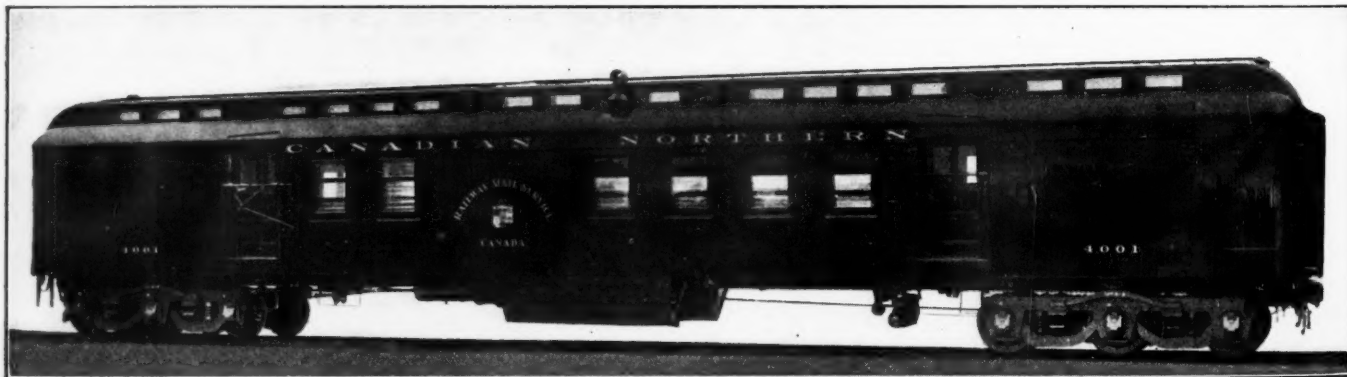
The selection of the composite type of construction is due partly to climatic conditions and partly to the prevailing shop conditions and equipment, which are favorable to the maintenance of cars of this construction. The winter conditions under

slopes each way from this line. Rubber packing  $\frac{1}{8}$  in. thick is used all around to insure weatherproof joints. A horizontal curtain, the roller of which is placed near one side of the opening, is operated by a cord hanging from the opposite side. The skylight does not project more than 3 in. above the roof of the car at its highest point.

The following is a description of the details of construction of the dining cars. These cars include some features not common to all of the other classes, but so far as uniformity is possible all classes are similar.

## UNDERFRAME

The principal longitudinal members of the underframe are

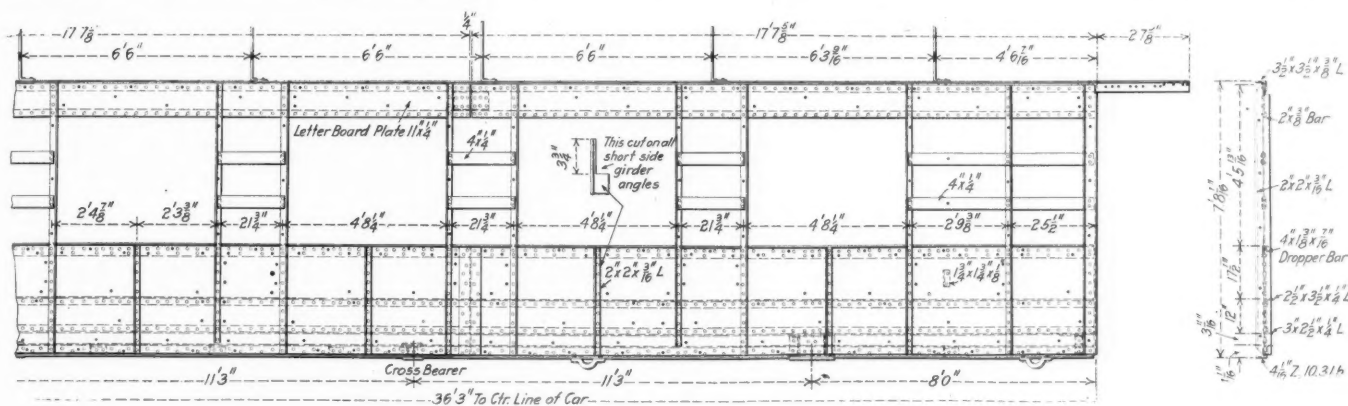


Canadian Northern Postal Car



two 15-in., 33-lb. rolled steel channels, 77 ft. 10½ in. long. Continuous top and bottom cover plates, 23 in. wide by 77 ft. 4⅞ in. in length and 68 ft. 4 in. in length, respectively, are riveted to

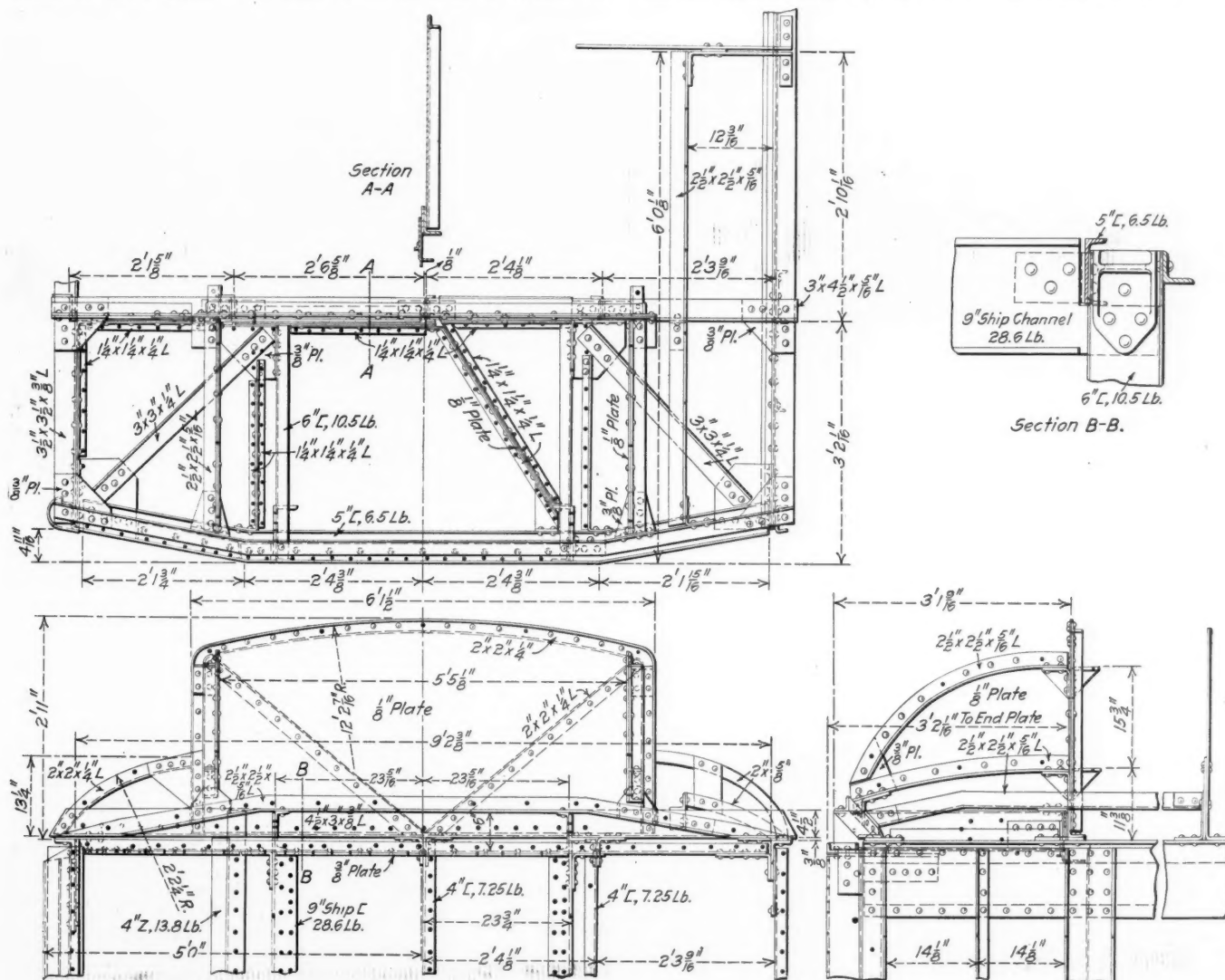
the Standard Coupler Company's platform attachment, having a capacity of 42,000 lb. In addition to the capacity of the spring buffer and draft gear the center sill construction is designed to



### Steel Side Frame of the Dining Cars

the flanges of the center sills. The top plate has a thickness of  $\frac{1}{4}$  in. and the bottom plates a thickness of  $\frac{5}{16}$  in. An additional top cover plate  $\frac{1}{4}$  in. thick by 23 in. wide is applied for

resist a buffing shock of 400,000 lb. with a factor of safety of  $4\frac{1}{2}$ . The original cross sectional and flange area of the center sills has been restored by the use of reinforcing members where-



### Hood Construction of the Dining Cars

a distance of 12 ft. 6 in. each way from the transverse center line of the car. The draft lugs are riveted directly to the center sill, a Miner gear with a capacity of 150,000 lb. and a movement of  $2\frac{1}{8}$  in. being applied. The draft gear works in unison with

ever it was necessary to cut the sills to allow piping to pass through.

The end sills are  $\frac{3}{8}$ -in. pressed steel diaphragms extending between the side and center sills. To the top flanges of these

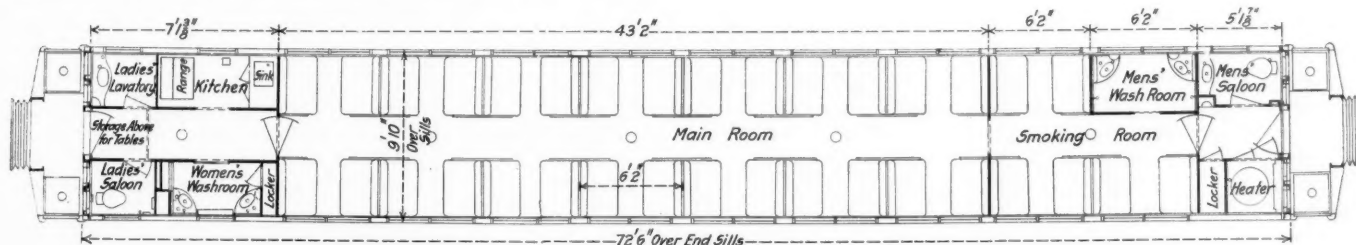




corner to the intersection of the bolster and center sill by a 6-in. 10.5-lb. channel, placed with the flanges down. The platform end sill is an 8-in., 34-lb. H-beam, carefully fitted and attached to the end of the center sills by means of two 6-in. by 3-in. by  $\frac{3}{8}$ -in. angle corner plates at each sill. The vestibule bumpers are U-sections pressed from  $\frac{1}{4}$ -in. plate. They are secured to the backs of the 9-in. 28.6 lb. ship channel vestibule end posts, the lower ends of which form a part of the platform construc-

tion. The ends of the H-beam end sill are framed between the flanges of the ship channels, angle corner plates connecting the webs of the H-beam and the channels.

from this construction, however, in that the absence of side windows makes possible the use of diagonal braces between the side posts. This arrangement is illustrated by the photograph of the baggage car frames, which also shows the wood members to which the interior and exterior finish is secured, superimposed upon the steel frame.



Floor Plan of 14-Section Tourist Sleeper; Canadian Northern

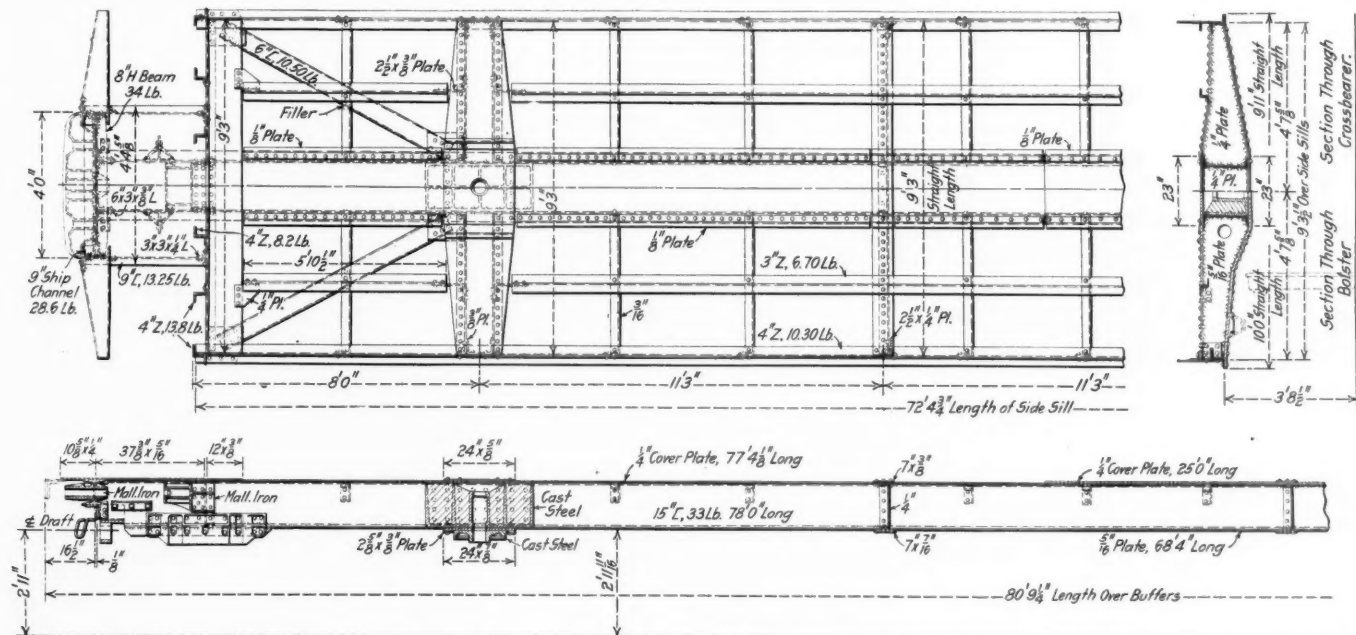
tion. The ends of the H-beam end sill are framed between the flanges of the ship channels, angle corner plates connecting the webs of the H-beam and the channels.

#### BODY CONSTRUCTION

The steel side frame is of girder construction with a bottom girder plate of  $\frac{3}{16}$ -in. material extending to a height of  $36\frac{3}{4}$  in. The letterboard plate is  $\frac{1}{4}$ -in. thick and has a width of 11 in. The side frame has a total height of 7 ft. 8  $\frac{3}{16}$  in., the two girder plates being tied together by the 2-in. by 2-in. by  $\frac{3}{16}$ -in. angle side posts. The lower edge of this plate is riveted to the web of a 4-in. 10.3-lb. Z-bar side sill and at points 3  $\frac{11}{16}$  in. and 15  $\frac{11}{16}$  in. from the top of the side sill are longitudinal

side, an end door post of 4-in. 8.2-lb. Z-bar section on the outside and 4-in. 7.25-lb. channel section at the partition side. The latter post is located near the longitudinal center line of the car. A channel post of the same section is placed at the corner of the kitchen refrigerator, which occupies one side of the vestibule. The body corner post on the refrigerator side of the car is replaced by an 8-in. 13.75-lb. channel placed with the back parallel to the side of the car and the flanges out.

At the other end of the car the framing is symmetrical owing to the location of the end door on the center line. Here the corner posts and intermediate posts are 4-in. 13.8-lb. Z-bars, while the door posts are 4-in. 8.2-lb. Z-bars. All end posts are riveted to the outer face of the end sill.



Steel Underframe; Canadian Northern Dining Cars

angles of 3-in. by  $2\frac{1}{2}$ -in. by  $\frac{1}{4}$ -in. and  $2\frac{1}{2}$ -in. by  $3\frac{1}{2}$ -in. by  $\frac{1}{4}$ -in. sections, respectively. The flange of the lower angle serves as a floor support. At the belt rail a 4-in. by  $1\frac{3}{8}$ -in. by  $\frac{7}{16}$ -in. dropper bar is riveted on the inside of the girder plate.

To the top of the letterboard plate is secured the  $3\frac{1}{2}$ -in. by  $3\frac{1}{2}$ -in. by  $\frac{3}{8}$ -in. angle side plate which extends throughout the length of the car, including the vestibules. A rectangular bar of 2-in. by  $\frac{3}{8}$ -in. section is riveted to the bottom of this plate on the inside.

The body framing of all the passenger-carrying cars closely follows the arrangement of the dining cars, the variations being largely due to the difference in window arrangement. The arrangement of the postal and baggage cars differs considerably

The hood construction is such as to form practically a horizontal girder by which any load against the upper part of the vestibule end posts is distributed to the side frames of the car.

#### FINISH

Superimposed upon the steel framework is a practically complete wood frame carefully fitted together and bolted to the steel members. To this the interior and exterior finish of the car are applied. The result is a type of construction which has proved in service to retain the good qualities of a wood car without the slightest tendency toward squeaking, the latter result being largely contributed to by the ample use of quilted cotton for all contacts between the framing and finish.

The floor is of No. 22 Chanarch sectional steel flooring, which is laid directly upon the steel floor supports. This is covered with a composition flooring made up of Magnesite, sawdust and magnesium chloride, which is laid to a thickness of  $\frac{5}{8}$  in. To facilitate the proper cleaning of the floor and prevent water from reaching the steel framework, this material is extended up around the sides and ends of the car to a height of 1 in. Below the floor are two dead air spaces, the nailing strips for the insulating walls being bolted to the steel frame members. The lower wall is made up of a layer of 13/16-in. tongue and grooved material, upon which is placed one layer of heavy waterproof tar paper and a layer of 3-ply Salamander. The intermediate wall is similar to the lower one except that the layer of tar paper is omitted. A single layer of 3-ply Salamander is placed over the center sill, crossties and bolsters.

The deck is closed in tightly and glazed on account of the difficulty of keeping rain out where the deck sashes are not securely screwed in place. Special care is necessary to secure weather-tight joints, because the prevailing winds are north and south over a greater part of the transcontinental route.

The cars are equipped with 5-in. by 9-in. six-wheel trucks of all-steel construction. The car body and the trucks are securely locked together by the use of the Coleman center pin in connection with a Wood roller center plate. Wood roller side bearings are also used.

The problem of keeping heater drips and basin and sink drains from freezing in severe weather is one which has been diffi-

The cars are heated by the Gold Car Heating & Lighting Company's duplex coil system of hot water circulation, which permits the use of fire and steam in the heater at the same time.

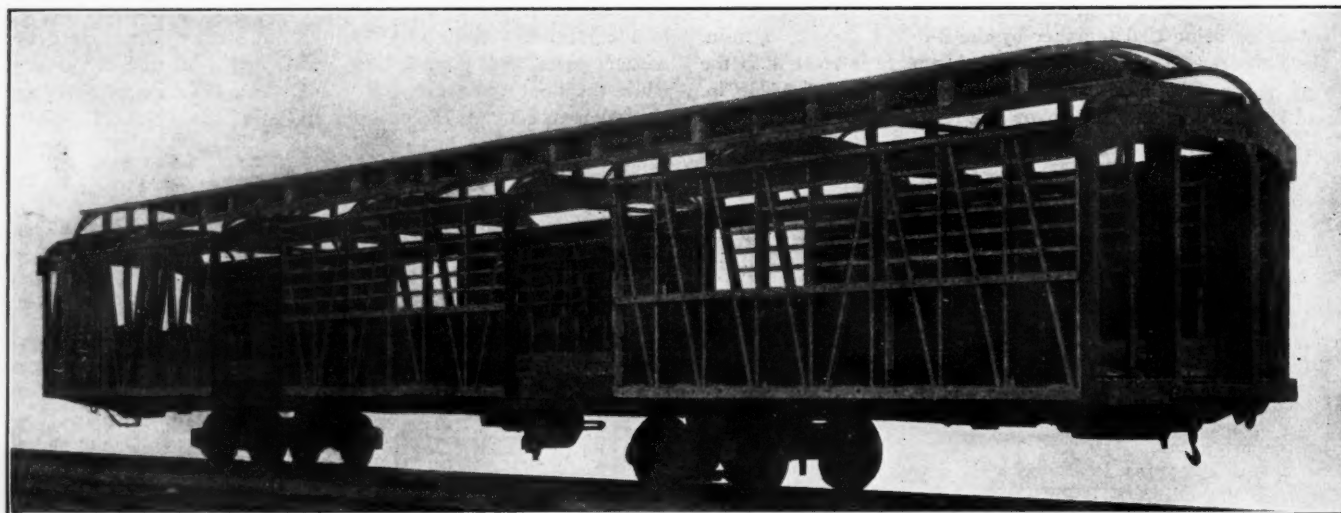
## THE WEEK IN CONGRESS

By W. L. Stoddard

Washington, Feb. 2, 1916.

All of a sudden this week, Tuesday, the House Committee on Interstate and Foreign Commerce began hearings on the railroad securities bill. Everyone had supposed this piece of legislation to be buried beneath months of neglect, and only a week ago Chairman Newlands of the Senate Interstate Commerce Committee was declaring that nothing ought to be done on this bill till the proposed railroad commission had been created and given a chance to make a thorough investigation of the matter.

Senator Faulkner appeared before the committee, as did A. P. Thom, and other hearings may be held if it shall be thought desirable. In all probability the fact that the committee is paying this much attention to the bill probably evidences a desire on the part of the ruling powers in Congress to manifest some activity along the line of railroad legislation. If the bill is reported from this committee, it goes without saying that it will be put through the House—it having already on a previous occasion been enacted by that body. And if it passes the



Body Framing of the Canadian Northern Baggage Cars

cult to solve. Trouble from drains freezing has been experienced even where pipes  $1\frac{1}{2}$  in. in diameter are used. All drains are now fitted with a simple thaw-out device adopted after a number of experiments. A 3-in. pipe sleeve, open at the lower end, surrounds the drain pipe where it passes through the floor and insulating walls. This is closed at the top, above the floor, with a cap to which is connected a  $\frac{3}{8}$ -in. thaw-out line, taking steam through a special choke fitting from the steam train line. A globe valve in the thaw-out line permits the operation and control of the device from the interior of the car. In order to avoid uncoupling cars to thaw out frozen heater drips, all cars are equipped with a thaw-out hose steam connection and each baggage car carries 50 ft. of hose in a sealed locker for this use only.

The cars are provided with the Stone axle generator system of car lighting. Arnoldi ventilators are used, the dining car being equipped with enough of these ventilators, in connection with side intake ventilators, to provide ten changes of air per hour in the dining room. The kitchen is provided with a hood ventilator and an electric exhaust set together with two top deck vents, which provide for 20 changes of air per hour when standing or 35 changes per hour when running.

House it will clearly be up to the Senate to consider the matter at least formally.

Nearly seventy representatives of the state railway commissions, the President's conference committee and of various railroads, acting independently, met in the hearing room of the Interstate Commerce Commission last week to discuss fundamental issues involved in the physical valuation of the railroads. The hearings lasted for the better part of Wednesday, January 26, and Thursday, January 27. The testimony is at this writing in the hands of the various witnesses for their corrections.

Counsel for the railroads argued that the state commissioners, in briefs filed before the commission, have appeared to object to co-operation between that commission and the railroads in carrying on the valuation work on the theory that the railroads should be heard only after a tentative value has been fixed on railroad property. They maintained that the valuation act requires present co-operation, and that needless duplication and controversy result from lack of such co-operation.

Senator Joseph L. Bristow, of Kansas, also appeared before the conference and put into the record his views about the original purpose of the act providing for valuation. The senator was active in the framing of the legislation.



# The Government and American Railroad Needs\*

Examination Into Existing Conditions; Suggestions  
for Expression of a New Spirit Toward Transportation

By Otto H. Kahn  
of Kuhn, Loeb & Company

The conflicts and the storms which have raged around the railroads these many years have largely subsided. A system has been evolved which, while preserving for the country in the conduct of its railroads the inestimable advantage of private initiative, efficiency, resourcefulness, and responsibility, yet through governmental regulation and supervision emphasizes and protects the community's rights and guards against those evils and excesses of unrestrained individualism which experience has indicated.

The system as it has evolved itself in America, though it is resented by some of the Bourbons as far too advanced and as an indefensible interference with the rights of property, and by some of the Ultra-Radicals as not going far enough, seems to me in theory an almost ideal one. But the best of theories is futile if its practical application is at fault; and I know of few more flagrant instances of the unwise and unsound application of a wise and sound theory than in the case of our railroad legislation.

There is no parallel I know of in any other country to its greatest industry being placed, down to its minutest details, under the almost autocratic power of seven men owing defined accountability to no one, selected for relatively short terms and according to no particular standard of training or qualifications, and being practically free from control, restraint or appeal. But it is not so much the existence of that power, excessive though it be, of which the railroads complain; in fact, not a few railroad men have come to be reconciled to the theory on which it rests and even to consider the underlying principle a wise and beneficent one. Practically all, I believe, recognize that thorough public regulation has come to stay. It is the faultiness and inadequacy of the law under which the Interstate Commerce Commission works and exercises its power and the multiplicity of masters under whom the railroads have to serve and whom they have to satisfy that constitutes the main burden of their grievances and that cries for reform.

## THE INTERSTATE COMMERCE COMMISSION

That the Interstate Commerce Commission, being at the same time prosecutor, judge, and jury, combining in itself legislative, executive, and judiciary powers, is a negation of the root principle from which the American system of government springs, may be stated as an incontrovertible fact. Such combination of powers in one body has been styled by James Madison "the very definition of tyranny."

I am far from underrating the great ability, vast industry, and devotion to duty of the men now composing the Interstate Commerce Commission, nor do I share in the not-infrequently-heard opinion that they are hostile to the railroads on principle, believing as I do, on the contrary, that they are earnestly striving to do justice according to their conscience and judgment and are bravely struggling with a simply intolerable burden of work and responsibility. But it cannot be gainsaid that to this commission, which has greater power and greater responsibilities concerning the industrial life of the nation than probably any other tribunal anywhere in the world exercises there has never yet been appointed a man who came to it qualified by first rate experience in railway operation, or by broad business experience, or any considerable experience in financial matters.

## THE COMMISSION'S OVERWHELMING TASK

I doubt whether anywhere else can be found a body of seven

men on whom devolves the staggering, crushing, stupendous mass of work which is laid upon the Interstate Commerce Commission. If it were composed of the wisest, most expertly trained minds and most vigorous working capacities to be found in this or any other country, it would be impossible for it to accomplish the superhuman task which Congress, in its eagerness to rid itself of troublesome problems, has piled and keeps piling upon it. If any one wishes to have detailed proof of the correctness of this statement let him read the last annual report of the Interstate Commerce Commission with its formidable array of 200,000 pages of testimony taken, 150,000 tariff publications received, hearings held, opinions rendered, orders issued, claims, complaints and applications disposed of, inspections made, accounts examined, prosecutions initiated or conducted, statistics gathered, Congressional inquiries answered, and so forth. And let it be remembered that, in addition to its railroad work, the commission has also to supervise and regulate telegraph, telephone, and pipe lines and express companies. The result is not merely delay and insufficient time for deliberate consideration but the necessity to relegate the hearing and investigation of many important cases to clerks or agents.

## THE PREDICAMENT OF THE RAILROADS

If this presentment exhausted the grievances of our railroad industry it would be serious enough, but it is very far from exhausting them. Indeed, the most serious grievance is the fact that in addition to the activities of state legislatures there are not less than 43 state commissions, exercising varying degrees of power over railroads, guided in their decisions by no precedents or fixed rules, their jurisdiction and their decrees intertwining, conflicting with, upsetting those of each other and of the Interstate Commerce Commission. It is not surprising that the authority of such state commissions, of which it would be too much to expect or even to ask unyielding imperviousness to public pressure, should have been exercised, in not a few instances, frankly for the selfish interest of each state, somewhat on the lines of creating through the fixing of state railroad rates and otherwise the equivalent of a protecting tariff or of an export bounty for the benefit of the industries or the consumers of each particular state. Nor will it be wondered at that there have been instances of a tendency to use the commission's authority over the issue of stocks and bonds toward forcing the railroads to spend part of the proceeds for purposes which to the commissioners appeared advantageous for their particular state or certain localities therein.

In several cases the carrying out of suggestions made by the Interstate Commerce Commission to the railroads with the view to enabling them to obtain more adequate revenues was peremptorily stopped by state commissions which ordered the railroads *not* to do the very things which the Interstate Commerce Commission had told them they should do and had criticised them for not having done before.

## A MASS OF CONFLICTING LEGISLATION

I am far from holding the railroads blameless for some of the conditions with which they are now confronted. Not a few of them were arrogant in the days of their power, many mixed in politics, some forgot that besides having a duty to their stockholders they had a duty to the public, some were guilty of grievous and inexcusable financial misdeeds. But, in their natural resentment and their legitimate resolve to guard against similar conditions in the future, the people have overshoot

\* From an article in the *World's Work* for February.

the mark. The proof of the pudding is in the eating. Not less than 82 railroads, comprising 41,988 miles and representing \$2,264,000,000 of capitalization, are in receivers' hands. The duration of receivership has become longer and longer, far longer than it used to be, owing to the difficulty of raising the necessary funds for the rehabilitation of the properties and for taking them out of receivers' hands, which difficulties are largely due to the complications and delays resulting from the jurisdiction and views of state commissions. Railroad construction has practically stopped, the purchases by railroads have been reduced to a minimum, so much so that, had it not been for the windfall of the "war orders," our steel and cognate industries would have faced an exceedingly serious situation. Railroad credit has become gravely affected. It is true that faults of management and disclosures of objectionable practices have been contributory causes in diminishing American railroad credit, but from my practical experience in dealing with investors I have no hesitation in affirming that the main reason for the multiplication of railroad bankruptcies and of the changed attitude of the public toward investing in railroad securities is to be found in the federal and state legislation of the years from 1906 to 1912 and in what many investors considered the illiberal, narrow, and frequently antagonistic spirit toward railroads of commissions charged with their supervision and control.

Considered from whatever point of view, the conclusion seems to me unavoidable that American railroad legislation, whilst sound in theory, is in practice a patchwork, a makeshift, and grossly and fundamentally faulty. The Interstate Commerce Commission, overburdened with labors and duties vastly beyond the capacity of any seven men, is bound to leave much important work to subordinates. In the case of rate decisions it is compelled to resort to postponements which in effect amount to denial of justice, for the power possessed by the commission since 1910 to suspend for ten months proposed rate increases is nothing less than the power—opposed to all equity—of inflicting heavy and irrecoverable monetary penalties before or pending trial.

#### SUGGESTED REMEDIES

Railroads, being essentially nation-wide in their functions, should, as to rates and other phases of their business directly or indirectly affecting interstate results, be placed under one national authority instead of being subject to the conflicting jurisdiction of many different states—a jurisdiction the exercise of which is always subject to the temptation of being used unfairly for the selfish and exclusive advantage of the respective individual states.

Until the advent of the railroad legislation of recent years, the rate-making power in interstate commerce (and, in most of the states, also for intrastate commerce) was in the hands of the railroads, subject to judicial review upon complaint. The rates resulting from that system were much the lowest prevailing anywhere in the world, notwithstanding the fact that wages paid by American railroads are fully twice as high as those obtaining in Europe. Under the bill of 1910, the interstate rate-making power was to all intents and purposes conferred upon the Interstate Commerce Commission (subject to interference by states and state commissions), but with characteristic unfairness or thoughtlessness the power to prescribe *minimum* rates, which manifestly ought to be the concomitant of the power to prescribe *maximum* rates, was not given to the commission. The burden of proving according to the requirements of an undefined and uncertain standard the necessity for proposed rate increases was thrown upon the railroads. Personally, I believe that the principle of giving to the Interstate Commerce Commission power to *regulate* rates is sound, and I am convinced that it has come to stay. But I think that the now prevailing rigid and cumbersome system of what is practically *rate making* by the commission is neither sound nor wise.

#### A HELPFUL POLICY NEEDED

It is vital to our railroads that investors be reassured and

encouraged as to the safety and attractiveness of investment in American railroad securities, particularly also in view of the world-wide competition for capital which, sooner or later after the close of the European war, is likely to set in. A more liberal and helpful policy toward railroads should be inaugurated and a greater margin of net earnings secured than can be obtained under the existing rates in normal times; and in this connection it must be borne in mind that such margin must include a sum over and above what would be a reasonable dividend because the nature of the railroad business makes the accumulation of a substantial surplus a necessity for every properly managed line. A railroad can never be considered a finished product. Expenditures are continually required and not a few of these outlays, such as for the elimination of grade crossings, better station buildings, etc., produce no direct revenue. If railroad officers are to plan for the future in a large and far-reaching way, if an adequate supply of capital is to be forthcoming for the extension and development of our railroads commensurate with the opportunities before our farmers and merchants and with the vast size and promise of our undeveloped areas, there must be not only reasonable liberality but above all reasonable stability of policy. In other words, the railroad question must be taken out of politics. The fortuitous and fortunate circumstances that, owing mainly to the direct and indirect effect of the stimulus of huge war orders and because of other unusual circumstances, railroads are doing much better at present, and that investors, after having left railroad securities more or less severely alone for years, are, for the time being, looking upon them with a friendly eye, should not make us lose sight of the underlying fact that the railroad industry is in an inherently weakened condition, that the spirit of enterprise has largely gone out of railroading, that construction has stopped, that only the absolutely necessary minimum is being spent for equipment, etc. Nor must the present prosperity of the country blind us to the consideration that the full measure of prosperity which it is capable of attaining or, indeed, any permanent and comprehensive progress or prosperity cannot be reached as long as its most important industry, that of railroading, is bureaucratized, shackled, harassed, and lamed.

The present lopsided structure of railroad laws ought to be demolished and superseded by a new body of laws designed, not to punish the railroads, but to aid them toward the greatest development of usefulness and service to the country, conceived upon harmonious, carefully considered, scientific, and permanent lines. The banking and currency legislation of 1913 affords an appropriate precedent and in many respects a parallel. The national functions and character of the railroads are largely analogous to those of the national banks. Like the national banks, so should the railroads be freed, at least in essentials, from the conflicting and multitudinous jurisdiction of the several states and placed under federal authority. And just like the national banks, they should not only be permitted but be compelled to co-operate, and thus mobilized for the maximum extent and efficiency of service; in other words, pooling and kindred arrangements should be sanctioned, subject to the approval of the Interstate Commerce Commission. The formula and principle of the banking and currency legislation, viz., a strong, effective, and controlling Central Federal Board in Washington, relieved from detail work and from certain essentially conflicting functions, with Regional Boards according to geographic groupings, might prove exactly suited to railroad legislation. Furthermore, the same body which determines earnings by fixing rates should be charged with the responsibility of hearing and determining wage disputes between railroads and their employees, or if that be not practicable then at least with the duty of giving full weight and consideration to all facts that go to enhance the cost of operating railroads, such as legislative enactments like the full crew law, increased taxation, advances in wages, and so forth.

The situation resulting from the European war has brought



to this country a scope and a wealth of opportunity to which I know of no parallel in the history of the world. But there is no great opportunity without a corresponding duty, no privilege without a corresponding obligation to use it wisely and beneficently. By all means let us have vigorous governmental action, legislative regulation, administrative control whenever and in whatever ways, after mature and dispassionate consideration, it appears best in the interest of the country. But do not let us have paternalistic régime, ignorant interference, partisan motives, political viewpoints, narrow technicalities. Let us have no patience with the presumption that men who, mostly from small beginnings, have fought their way to the top after having passed through the hard and searching test and discipline of business, are to be ignored or distrusted in the shaping of the industrial and economic policies of the country, because of alleged incapacity or unwillingness to take a broad and patriotic view of national questions directly or indirectly affecting their own interests.

#### THE BEGINNING OF A NEW ERA

I know of no finer or more honorable body of men than the presidents of our American railroads. With few exceptions, the men in active charge of large businesses or corporations in

gard of the counsel and expert knowledge of business men as in the United States.

Fortunately, there have been indications within the recent past which justify the hope that this condition of affairs is about to change and that prejudices and antagonisms which have been prevalent all too long are beginning to give way to more auspicious relations.

Is it too much to hope that our legislators and administrators will meet with broad, wide, and dispassionate vision and action the new phase of economic development which is opening up before the American nation?

### EASTERN AND CENTRAL TIME STANDARDS IN OHIO AND MICHIGAN

Myron E. Wells

The confusion resulting from the recent changes of standard time by the cities of Cleveland and Detroit is still a subject of a good deal of discussion, and the right settlement has not yet been reached.

As the readers of the *Railway Age Gazette* are aware, it was



Copyright, map from Rand, McNally & Co.'s Atlas

#### Dividing Lines Between Standard Time Sections

this country have made their own positions; the vast majority started at or near the bottom of the ladder. And there is no country where the capacities of representatives of business are so little availed of in governmental and political affairs, their views so little heeded and so frequently rebuffed, where legislation affecting economic, industrial, and financial matters is framed, and the resulting laws administered with such disre-

gard of the custom, up to 1883, for each large city or important railroad center to have a local time of its own. But as the means of transportation began to bring these points into closer communication with each other, there arose many difficulties. For example, there was Chicago time, St. Louis time, Cincinnati time and Cleveland time, all different, and all differing by an odd number of minutes. When trains from each one of these points

ran into another common point with still a different time—Indianapolis, for example—there were five different times to confuse the traveling public. The ultimate result was that there were 53 different railroad times in the United States. Some traveling salesmen carried watches fitted with two minute-hands. Now, as is familiar to every one who has seen the Official Guide, there are but four standards, and these are separated from each other by even hours. The recent death of W. F. Allen, secretary of the American Railway Association, has called attention to the unique work that he did in the accomplishment of this reform. His name should, indeed, be enrolled among those of the foremost men of the nineteenth century.

European countries adopted Standard Time as follows: Belgium, May, 1892; Germany, April, 1893; Italy, November, 1893; Denmark, January, 1894; Switzerland, January, 1894; Sweden, January, 1895; Victoria, New South Wales, Queensland and New Zealand, 1895; China, 1896; all Australia, May, 1899; Spain, January, 1901; Austria, South Africa and Turkey, 1903.

So, it will be seen, this really wonderful and valuable piece of work, originating entirely within the United States, has hardly been adopted throughout the world, when the "progressive" city of Cleveland, surrounded on all sides by Central time, acting with little thought or consideration, takes a leap of 30 years into the past, and does its best to bring a return of the inevitable confusion and inconvenience of former times. The confusion was still more accentuated when the Erie, the Wheeling & Lake Erie, and the Lake Shore Electric changed, with the city, to Eastern time. It became an every-day occurrence to have people saunter into the stations of these roads in the most leisurely way to take trains already gone; while railroads that did not change—the Baltimore & Ohio, the Big Four, the New York Central, the Nickel Plate and the Pennsylvania—saw just the other side of the picture; people rush in breathlessly to find they had miscalculated the time and had an hour to wait.

The inconvenience to the families of thousands of railroad men whose roads use Central time is not to be underestimated. The family must use city time for school and general reasons; but the head of the family must go by Central time. That means that he must work till 7 p. m., city time. When he gets home to dinner the evening is well begun, and by the time dinner is over the evening affairs of the city are well on and it is too late for any evening engagement.

The Lake Shore Electric has seen its error and has recently changed back to Central time. At the last meeting of the American Railway Association an effort was made to persuade the Erie and the Wheeling & Lake Erie to change back to Central time, but so far the request has not been complied with.

Michigan, in 1885, passed a law making Central time the legal time for the whole state. But, in spite of this law Detroit has followed Cleveland in adopting Eastern time. Even worse confusion resulted here, for many small towns in the vicinity made the change; and the Detroit United Railways, running half way through Michigan, and entirely in Central-time territory, changed to Eastern time. Then one or two large cities, including Saginaw and Bay City, entirely surrounded and isolated from Eastern time, began to follow Detroit. The confusion became so great that these cities one by one changed back, as quickly as they had made the first disturbance.

It was stated recently in a Cleveland paper that the Chamber of Commerce of Cleveland intended to send a mission to Chicago to persuade that city to adopt Eastern time; and another paper surmised editorially that when the Chamber of Commerce had persuaded Chicago to adopt Eastern time the campaign would be carried further west until Omaha, Denver and Salt Lake City had adopted it.

This is reducing the matter to the absurd. Let it be said in justice to the people of Cleveland, and other points desiring Eastern time, that there are some arguments in its favor. It gets the people up an hour earlier and gives them an hour more of daylight at the end of the day for recreation. The purpose of this paper is not so much to review what has been done as to seek a solution.

An inspection of the map indicating the divisions between the Standard times in the United States will show that the line dividing Eastern from Central time runs far east toward the 75th meridian, which is the standard of Eastern time and should be the center of Eastern time territory. From Mackinac Island it follows Lake Huron, the Detroit River and Lake Erie to Buffalo, then to Pittsburgh, Wheeling and Huntington, W. Va. This division was doubtless made by the railroads in 1883 under the impression that the larger the division point the better could time be changed. Buffalo was then the junction of the New York Central and Lake Shore railroads; the Pennsylvania railroad was divided into lines east and west of Pittsburgh; and much the same was the case with the Baltimore & Ohio at Wheeling.

In the consideration of this question it has been found in the west that it is much more convenient to change time at a small than a large division point. I refer especially to the transcontinental lines running from St. Paul and Minneapolis and Missouri River points. All of these lines change from Central to Mountain time at small division points between the large terminals. The writer has had experience running a locomotive and later supervising crews running trains out of three of these points, and it soon becomes apparent that time may be changed on a railroad at any point where trains have an "In" and "Out" register, provided the despatchers' districts break at these points. It has also been found that there is less confusion among people generally when the large cities are entirely surrounded by the same kind of time.

If the people of eastern Ohio—Cleveland, Canton, Youngstown, Columbus, etc.—really desire a change to Eastern time I am sure the railroads can figure a new dividing line running through Toledo and western Ohio and joining the present line at Huntington, W. Va. Whether the line follows the Cincinnati, Hamilton & Dayton to Cincinnati and runs thence up the Ohio River to Huntington, or whether it zig-zags across the state at other points is a question for the railroads themselves to settle.

It would not be so serious for Detroit to retain Eastern time if the movement could be stopped at the west city limits, or at some point immediately west, and not be left to spread promiscuously throughout the state.

Had the Cleveland Chamber of Commerce come forward with some such reasonable solution for the problem its acts could not have been so severely criticized; but the recent proposal to carry the propaganda to Chicago, the largest railroad center in the world, with millions of people in Central time territory to the east of it, rather accentuates the lack of any real competency to deal with the question.

What is actually done matters very little. As in other things it is the manner in which it is done that is important. It matters little whether the dividing line runs through Oshkosh or Kalama-zoo so long as there is a line with one time to the east of it and another to the west, decided on by the co-operation of the railroads and the cities and generally observed. If the railroads and the cities cannot agree the general government may have to take charge of the matter; for the standardization of time is of too much importance to the country at large and to the people as a whole, to be allowed to be the subject of experimentation in isolated communities. "Time chaos" is a new condition to the younger generation, but men of 55 to 75 years had their fill of such unnecessary evils prior to 1883.

**AERIAL CABLE LINE FOR VENEZUELA.**—According to a British consular report dealing with the trade of Venezuela for the year 1913-14, the manager of the Puerto Cabello & Valencia Railway has signed a contract with the Venezuelan government for the construction of an aerial cable line between Valencia and Nirgua. Nirgua is 65 miles distant from Valencia, and is the centre of a rich agricultural region. The writer adds: "I understand, however, that the Bolivar Railway intends to dispute the right of the Puerto Cabello & Valencia Railway Company to tap the Nirgua region, asserting that this district lies within the territory granted to them in their contract with the Venezuelan government."



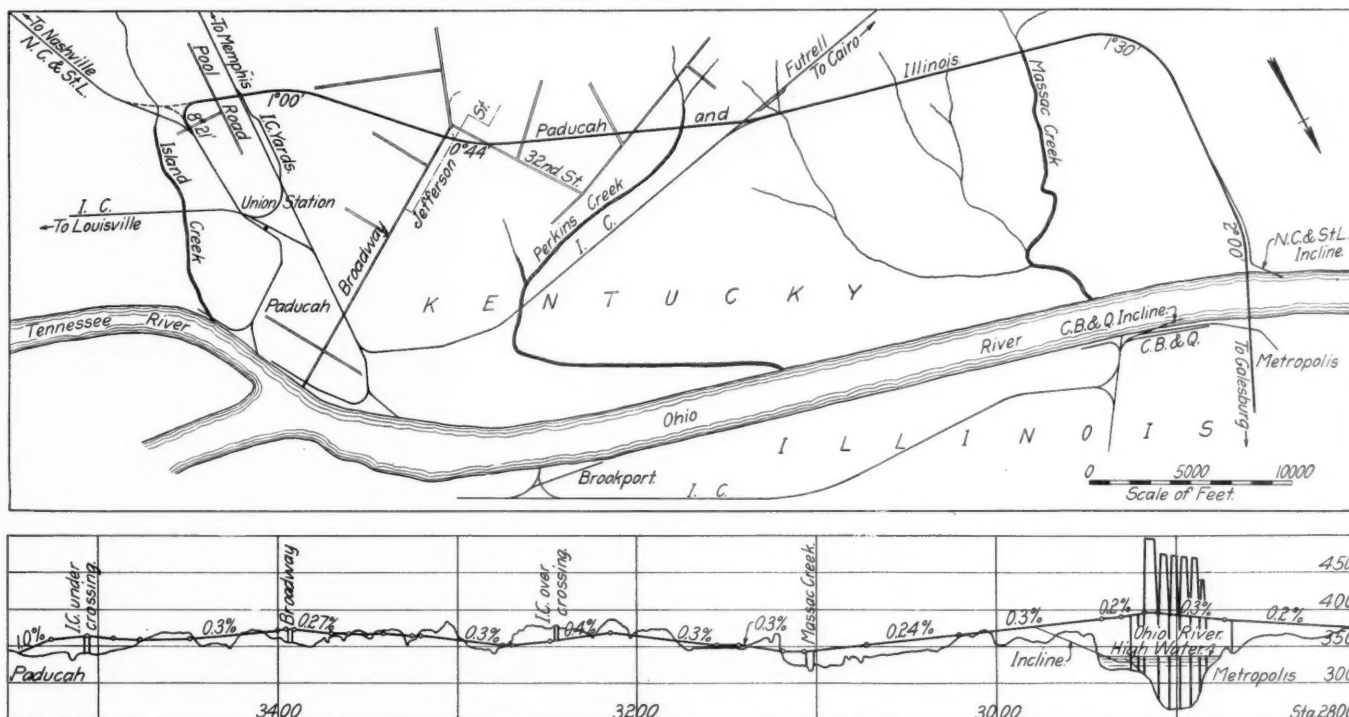
# Construction Work on the Paducah & Illinois Railroad

This Fourteen-Mile Line Involves One Fill of 995,000 Yards and Several Railroad and Street Crossings

In the *Railway Age Gazette* of July 23, 1915, there appeared a brief description of a new bridge now being built across the Ohio river at Metropolis, Ill. This bridge is part of a project entered into jointly by the Chicago, Burlington & Quincy, and the Nashville, Chattanooga & St. Louis, to effect a connection between

about 79 deg. The rest of the line is practically parallel to the Ohio river and makes a connection with the Nashville, Chattanooga & St. Louis, about one mile south of the union station at Paducah.

With the exception of a temporary connection at Paducah and



Map and Profile of the Paducah & Illinois Railroad

these two roads and involves also a railroad 14½ miles long between Paducah, Ky., the northern terminus of the Nashville, Chattanooga & St. Louis, and the south end of the Burlington line at Metropolis, Ill. The railroad has just been completed and was placed in operation on January 1, 1916, without waiting for the completion of the river bridge in 1917. The river cross-

a grade of 0.4 per cent for a distance of 3,350 ft. near the Illinois Central crossing at Futrell, which will permit of momentum operation, the maximum grade on the line is 0.3 per cent in each direction. The maximum curvature is 2 deg. The work is rela-



Looking Up-Grade on the Kentucky Incline. Bridge Approach Embankment on the Left. Incline Cut in the Distance on the Right

ing is now made by means of inclines down to the river on each side, arranged to permit ferry transfer.

A little more than 6,200 ft. of the railroad is in Illinois, north of the river bridge and viaduct, which occupy, together, a total length of 5,442 ft. The rest of the line is in Kentucky. The line runs south from the river a distance of about 2¼ miles and then turns to the east on a 1-deg. 30-min. curve for a total angle of



Cut East of Illinois Central Over-Crossing. Material Stands Practically Vertical on the Right

tively light except at the south approach to the Ohio river bridge, where the embankment attains a maximum height of 73 ft. Excluding this approach the grade line is determined very largely by a separation of grades at two crossings with the Illinois Central and several important highways.

An accompanying map shows the layout of the incline on the

south side of the Ohio river, which is on property owned by the Nashville, Chattanooga & St. Louis, and was constructed independently by that road. The incline runs down the west side of the high embankment and has a length of 7,442 ft. It turns sharply down stream at the river bank, ending in a ferry incline 564 ft. long on a 4 per cent grade and projecting into the river at an angle of about 30 deg., with the south bank. Besides the incline trestle, 1,556 ft. of the track north of the face of the south abutment of the river bridge is also on a trestle to avoid any encroachment of the river width as established by the end of the high embankment. South from the end of this trestle, lap



**Three-Span Bridge Over the Illinois Central Near Paducah**

sidings 750 ft. long have been provided to facilitate the handling of cars to and from the ferry incline.

#### THE EARTHWORK

Morris, Sheppard & Dougherty, Minneapolis, had the general contract for the earthwork south of the bridge, but sublet all of it except the west 13,000 ft., embracing the heavy work on the bridge approach. The material handled was sand, clay and gravel. No rock was encountered. Between Pont Road and Massac creek, a bed of good gravel was uncovered in the cut under about 14 ft. of clay. The clay was stripped by the contractor, half of it being used in the fill in the Massac creek bottoms, and the rest being wasted. The ballast was taken out and placed by company forces, using standard gage equipment in two or three trains, 40,000 cu. yd. in all being required.

The west end of the line, including the high embankment approach to the bridge and the incline to the river bank, required



**Reinforced Concrete Subway at Broadway**

995,000 cu. yd. of filling. As shown on the plan the main line to the bridge consists of an embankment 1,900 ft. long, averaging 70 ft. in height, which reduces owing to a rapid rise in the ground surface to an embankment about 20 ft. high, extending south for 6,000 ft. further. About 2,000 ft. of the incline is in a cut, the rest, with the exception of trestles previously mentioned, is on embankment.

All of the incline embankment was made by a class-24 Bucyrus drag line excavator, equipped with a 100-ft. boom and a 3½ cu. yd. bucket. Commencing at the river end, the material was taken from a borrow pit on the west side, which extends to the river bank so that it will serve permanently as a drainage ditch.

A berm was left between the incline embankment and the high embankment as far as the point where the incline goes into the cut to give ample drainage to the two embankments and to avoid trouble in the maintenance of the track on the incline arising from possible settlement or the sloughing off of the higher fill. Where the incline is in a cut, all of the material excavated was placed directly in the embankment for the bridge approach. South of the cut, the incline track roadbed is against a side of the higher embankment, and the combined embankments were made entirely by the drag line. The machine worked down the west side of the embankment, excavating from a pit on that side and then crossed over to the east side and finished the embankment, working north. In all 331,520 cu. yd. of material was handled by the one drag line excavator.

The 1,900 ft. of 70-ft. embankment was made by a 1½ yd. Bucyrus shovel with 46 4-yd. dump cars and 4 18-ton Porter locomotives. The material was taken from a borrow pit on the higher ground east of the tracks. The fill was made in three lifts. For the first lift a construction trestle was built next to each slope of the embankment, while for the other two, a trestle was built next to the east slope only. In each case as soon as the trestles were filled, the full width of the lift was obtained by spreading the dirt and throwing the tracks. The high embankment required 663,000 cu. yds. of material.

#### THE STRUCTURES

Just south of Paducah the grade is raised to cross over the Illinois Central line to Memphis, and also over Pool Road, a



**Illinois Central Crossing Over the Paducah & Illinois Near Futrell. Placing Concrete Slabs on I-Beams**

county highway. The crossing of the latter is accomplished by a 16 ft. by 13 ft. reinforced concrete box, following the standard practice of the Burlington. The Illinois Central bridge is located over the south end of a freight yard and provides for the undercrossing of seven tracks. It consists of two 33-ft. I-beam spans and one 52-ft. through plate girder span on reinforced concrete counterfort abutments and reinforced concrete piers 2 ft. thick at the top and spread to 3 ft. at the bottom. In the pier supporting one end of the girder span the concentrated loads from the latter are taken by three structural steel columns embedded in it.

The I-beam spans consist of four 24-in., 115-lb. I-beams under each rail spaced 12¾ in. center to center, with an 18-in., 55-lb. I-beam on either side, spaced 12 ft. 2½ in. center to center, serving as fascia girders. The floor of the through girder span consists of 18 in. transverse I-beams, the girder being of a special type with the web projecting below the bottom flange with flange cover plates both inside and outside. With this arrangement the I-beams are connected to the projecting portion of the web without any interference with the bottom flange and determine the underclearance of the span. The I-beams of all three spans are covered with 4-in. reinforced concrete slabs, having curbs on either side, to provide for ballasted track construction.

About two miles west of the Illinois Central undercrossing the line passes through a suburb of Paducah, requiring grade separation with three highways in a distance of about 2,000 ft. Broad-



way, the most important one, is crossed by a 4-span reinforced concrete subway. The roadway spans, which are 20 ft. clear width, consist of reinforced concrete slabs. The two sidewalk spans are of 7 ft. clear width and form, with the street line wall and the curb line bents, box abutments of a type previously used on several track elevation projects. The abutments are complete for two tracks, but the roadway slabs and the bent in the center of the street provide for a single track only.

At Futrell the line crosses under the Cairo line of the Illinois Central with a difference in elevation of the two lines such that a headroom of 20½ ft. was possible only by the use of a very thin bridge floor. The situation was complicated also by the fact that the crossing is on a skew. A width sufficient for two Paducah & Illinois tracks is provided by the use of a 70 ft. 7½ in. through skew girder span for the Illinois Central with girders 17 ft. 6 in. center to center. The floor construction is similar to that used at the Illinois Central undercrossing, but in this case the rails are set in a structural steel trough directly on the I-beams and are bolted in place by means of clip washers. The I-beams are covered between the rails, and between the rails and the girders, by a reinforced concrete slab 4 in. thick. For protection against corrosion, the top flange of each beam is covered with sheet zinc 1/32 in. thick and 9 in. wide, while protection against cinder blast is obtained by bolting a 1 in. by 10 in. board on the under side of each beam.

The only waterway of any importance crossed on the Kentucky side is Massac creek, which required a 100 ft. skew through girder span, with a 31-ft. I-beam span and 60 ft. of pile trestle on each side. At Perkins' creek, a somewhat smaller stream, there are one 30 ft. encased I-beam span and four spans of 22-ft. reinforced concrete trestle supported on concrete piers.

All work on this project was handled under the direction of C. H. Cartledge, chief engineer of the Paducah & Illinois, and bridge engineer Chicago, Burlington and Quincy. C. R. Fickes, resident engineer, was in direct charge of the work on the Illinois side, and is in charge of the construction of the Ohio river bridge, and C. H. Brodbeck, resident engineer, was in charge of the work in Kentucky. The structures were designed under the direction of A. Engh, office engineer.

### SENATE COMMITTEE REPORT ON RESOLUTION TO INVESTIGATE METHODS OF REGULATION

The Senate Committee on Interstate Commerce, on January 14, reported favorably with amendments the joint resolution creating a joint subcommittee from the membership of the Senate and House committees on Interstate Commerce, to investigate the conditions relating to interstate and foreign commerce and the necessity of further legislation relating thereto.

The text of the resolution, and the reasons for recommendation are reprinted from the Congressional Record of January 14 as follows:

"Resolved, etc., That the Interstate Commerce Committee of the Senate and the Committee of the House of Representatives on Interstate and Foreign Commerce, through a joint subcommittee to consist of five senators and five representatives, who shall be selected by said committees, respectively, be, and they hereby are, appointed to investigate the subject of the government control and regulation of interstate and foreign transportation, the efficiency of the existing system in protecting the rights of shippers and carriers, and in promoting the public interest, the incorporation or control of the incorporation of carriers, and all proposed changes in the organization of the Interstate Commerce Commission and the act to regulate commerce, with authority to sit during the recess of Congress and with power to summon witnesses, to appoint necessary experts, clerks, and stenographers, and to do whatever is necessary for a full and comprehensive examination and study of the subject and report to Congress at expeditiously as may be; that the sum of \$25,000, or so much thereof as is necessary to carry

out the purposes of this resolution and to pay the necessary expenses of the subcommittee and its members, is hereby appropriated out of any money in the treasury not otherwise appropriated. Said appropriation shall be immediately available and shall be paid out on the audit and order of the chairman or acting chairman of said subcommittee, which audit and order shall be conclusive and binding upon all departments as to the correctness of the accounts of such subcommittee.

"The reasons for recommending the passage of this resolution in its amended form may be briefly stated as follows:

"It is well known that at every session of Congress many bills are introduced by different members of the Senate and House having for their object the further regulation of carriers engaged in interstate commerce. This fact shows a continuing belief in the necessity of this kind of legislation, but a comparison of these bills displays a great variety of view as to what is necessary. While the individual initiation of legislation is an established principle, experience has shown that there are some subjects of congressional action which have become so complicated as to require a measure of co-ordinated and expert effort for their proper handling. Among these must be reckoned the subject of interstate and foreign commerce.

"The system of governmental regulation of interstate and foreign commerce which has now been in operation for 28 years has resulted in the variation and enlargement of the extent and powers of regulation and in the accumulation of valuable experience for the guidance of Congress. Particularly is this true of the Interstate Commerce Commission, whose recommendations to Congress from time to time in relation to the general subject of regulation have been invaluable and many of which have been acted upon but some of which still remain to be considered. The growth of interstate and foreign commerce and the enlargement of the powers and duties of regulation have so increased the exactions on the Interstate Commerce Commission as to necessitate, in the public interest, a comprehensive consideration of the best method of dealing with the situation and of expediting the public business.

"Adequate and well-managed transportation facilities constitute a prime necessity of business prosperity and are a common interest of all the people; and in order to afford these facilities and to enlarge them as the needs of commerce increase, the credit of the carriers, no less than the proper regulation of their operations, are matters of fundamental public concern.

"In view of these considerations the committee believes that for any further legislation which may be undertaken by Congress in this regard the whole subject of governmental regulation should be deliberately and thoroughly studied in the light of experience and of the suggestions of the Interstate Commerce Commission, the carriers, the shippers, and the general public with a view to adequately safeguarding the interest of the public and securing the establishment and maintenance of transportation facilities adequate to the needs of a growing and expanding commerce."

THE MELBOURNE ELECTRIFICATION.—Contracts for machinery and plant for the electrification of the suburban railways of Melbourne, amounting to over \$10,000,000, had been placed up to June 30, 1914, and work was in progress at the power-house at Newport, the car repair shops at Jolimont, and at the various sub-stations. The construction of new cars and alteration of existing cars is being carried out at the Newport workshops. It is proposed to install the latest system of power and automatic signaling based on the best features of the system now in use on the Metropolitan and District Railways in London. An engineer of the Pennsylvania Railroad Company has been engaged to superintend the installation of this signaling system. It was anticipated that the first section of the suburban line to be electrified would be completed about the end of this year, but delays have occurred owing to the war, and it is uncertain when it will be completed.

## A STATEMENT BY THE WESTERN RAILROADS ON THE WAGE DEMANDS OF THE ENGINEMEN AND TRAINMEN

The executive committee of the Association of Western Railways has this week issued a statement to the public on the wage demands, to be presented to the railroads, now being voted upon by the engineers, firemen, trainmen and conductors. The statement begins as follows:

"The four large organizations of railway employees, the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen, the Order of Railway Conductors and the Brotherhood of Railroad Trainmen, have combined in a nation-wide movement for a general advance in wages for their members, and other employees of the same classes, on all the railways of the United States and some of those in Canada, including 280,000 miles of line.

"The movement involves about 300,000 men. According to the statistics of the Interstate Commerce Commission there were employed in the United States in 1914, 61,365 engineers, 64,335 firemen, 47,621 conductors, and 135,853 trainmen. The average wages per day of these employees in 1914 showed the following increases over those paid in 1903: Engineers, 30 per cent; conductors, 32 per cent; firemen, 41 per cent; trainmen, 42 per cent.

"It is estimated by the railroads that the additional increases in wages these organizations have announced their intention of demanding would amount approximately to \$100,000,000 a year. As the total pay-roll in 1914 for the classes of employees involved was \$400,000,000, this is an increase of about 25 per cent. The railroad companies believe that these demands are not only unreasonable, but of such magnitude that they cannot even be considered with the present level of railway passenger and freight rates:

"Officers of the brotherhoods have been quoted as saying that they will refuse to submit their demands to arbitration and that unless the increase is granted a general strike of the enginemen and trainmen will be called. This movement is of tremendous importance to both the railways and the public. The question presented is not one that concerns only the employees and the railways; for any large advance in railway wages, in addition to the large increases that have been made in recent years, would have to be borne by the public; and it is needless to point out the disastrous effect on the public that would be produced by a strike which would tie up all the railroads of the country and the commerce of the entire nation. This would be the first strike that ever tied up anywhere near all the railways of the United States. It would be without a precedent in history except in the case of the strike a few years ago on all the railways in France, where the mileage is not one-tenth what it is here.

"As the interest of the public is so large the railroads believe not only that they are justified in presenting an explanation to the public of some of the more important points involved, but that it is their duty to do so."

It is then pointed out that while the proposition has been referred to by the officers of the labor organizations as one for an "eight-hour day," the terms of their demands provide only for an eight-hour basis of payment, and that as the employees do not propose to change the conditions affecting the length of the working day, but only the rates of pay, "it is evident that they do not expect to work any shorter hours." The statement says: "Instead of providing for an eight-hour day the rules which the labor organizations propose would simply increase the wages paid for the same amount of work and the question resolves itself into the single issue as to whether or not the highest-paid classes of railroad employees are entitled to still more money for their services." This is followed by an explanation of the methods of computing the wages of railway employees under their present contracts and under the proposed rules, which are quoted in full, together with a num-

ber of typical examples comparing the effects of the present and the proposed bases of payment.

"It will be noted," the statement says, "that these rules provide neither for a minimum nor for a maximum day of eight hours, but by requiring the same pay for eight hours as is now paid for 10 hours, they increase the wage rate per hour 25 per cent, and they make one hour's work the equivalent of 12½ miles instead of 10 miles, thus reducing the time after which overtime begins and increasing the hourly rate for overtime to 50 per cent more than the new regular hourly rate."

It is also pointed out that the proposed demand for time and one-half for overtime makes no allowance for the difference between railroad and industrial service, in that in industrial service the employer can usually control the amount of overtime or, if it is necessary to operate at overtime rates, can include the cost in fixing his prices, while the railroad can never shut down its plant, and overtime in many cases is absolutely beyond the control of the railroad officers.

"The argument has been advanced by the representatives of the employees," the statement says, "that increasing the rates of pay and overtime will induce the railroads to so rearrange their work that it can be accomplished in less time, and that it will not be necessary to pay the overtime rates. They do not claim, however, that they expect to do as much work in eight hours as in 10 hours. If overtime should be entirely done away with it would still be necessary for the roads either to pay the same men higher wages or to employ more men. The railroads have already, under the pressure of increasing wages and higher expenses of other kinds, exerted every effort to reduce overtime work to a minimum."

The statement concludes as follows:

"The railroads desire to retain in their service a high class of men and to pay them wages commensurate with their skill and responsibility as well as with the hazards and other conditions of their employment. They believe that the engine and trainmen are now receiving adequate and even liberal wages for the service performed. The present wage scales have been fixed by arbitration under federal laws by impartial boards of arbitration representing not only the railroads and their employees but also the public, which have taken into consideration not only the conditions of employment and wages in the railroad service in comparison with other lines of industry, but also the higher standard of living.

"No new conditions affecting either wages or conditions of employment have arisen since these previous advances in wages were adopted to justify rates of pay higher than the men are now receiving.

"Such large additions to expenses as would be caused by acceding to the demands of the employees would render imperative additional increases in passenger and freight rates."

Copies of this statement have been sent to every newspaper in the West, and large numbers of them are being distributed by the railroads themselves in various ways.

RAILWAY CONSTRUCTION IN COLOMBIA.—A recent law authorizes the construction of five new branch lines of the Colombia Pacific Railway (Ferrocarril del Pacifico). The object of these lines is to facilitate communication with the fertile interior of Colombia and to complete railway connections from the coast to the smaller cities in the Cordilleras. Surveys are to be made for branch railways to cover the territory as follows: (a) A line from Popayan to Carchi, in Ecuador, passing through the city of Pasto; (b) a line from Cartago, in the Department del Valle, to the terminal of the Amaga Railway, or to some point on this line which would connect the Pacific Coast lines with those of Antioquia; (c) a line to connect the city of Pasto with the lower part of the River Patia or with the Pacific Coast; (d) a line to connect the Popayan branch with the Alto Putumayo or with one of its navigable tributaries, starting from Pasto; (e) a line from Cartago to Quibdo, passing through Istmina. A term of four years is fixed for the completion of all the railways.



# Cost of Maintaining Private Sidings

Economics of the Contract Between Railways and Shippers; Waste Involved in Laying Unnecessary Tracks

By An Operating Officer

It was decidedly unfortunate that a conservative body, such as the Interstate Commerce Commission is believed to be, permitted an impression to reach the general public, that the railroads were carelessly wasting a large part of their revenue by furnishing free switching service on what are popularly known as private sidings. The railroads promptly brought the matter to a head by seeking the Commission's approval of tariffs to cover the service for which they were publicly flagellated. As is now known, the Commission declined to approve the proposed tariffs, on certain grounds which, to say the least, did not enhance the dignity of the Commission. Is the Commission entirely correct in its decision? Have all aspects of the subject been thoroughly investigated? Most of the discussion thus far has centred about the cost of service on private sidings; but there is another side of the question, namely, the cost, direct and indirect, of the sidings themselves.

As a common carrier, a railroad is required to furnish adequate facilities. It has many tracks auxiliary to the main line; some alongside of railroad owned warehouses, where less than carload freight is handled by the railroad, and others where cars can be loaded and unloaded by the shippers.

Shippers with sufficient capital desire private sidings, not primarily to benefit the operation of the railroad, but to benefit themselves. A man with a warehouse located ten blocks from a track where cars are placed for him to load or unload, or one situated half a mile or so from the railroad warehouse, has to pay for drayage to and from the public team track or the freight station. He also has to provide men in his own warehouse to take the goods from the drays. All this costs money. If this same shipper could obtain a private siding alongside his private warehouse the force which he maintained in his warehouse would suffice to load or unload the cars, and the drays would not be needed. Furthermore, if the same shipper received or sent a sufficient quantity of less-than-car-load packages (above specified minimum weight), he would be allowed the use of a car between his warehouse and the railroad freight station. It can be readily seen, therefore, that a private siding per se is a very valuable privilege. A private siding, of course, becomes more valuable in proportion to the volume of business done on it.

From the point of view of the railroad, private sidings have their advantages and disadvantages. Among their advantages, is the saving to the capital account in not having to buy additional property upon which to lay additional team tracks, to take care of increasing business. The applicant for a private siding usually furnishes an easement for the necessary land beyond the limits of the railroad premises. Furthermore, if a private siding does not extend too far away from the railroad company's property and is not located too far from a main distributing point in a railroad yard, it does not necessarily increase the cost of operation, as it is no more trouble to place cars upon, or remove them from, a private siding so located than it is to place cars upon, or remove them from, an adjacent public team track.

On the other hand, private sidings can greatly add to the cost of operation where they extend for a long distance from the railroad company's property, or where the tracks at a plant are many and the local switching or "spotting" is heavy; or where the plant itself is located a long distance from a central distributing point in a railroad yard. Where the existing public team track facilities are adequate separate tracks are an added unnecessary burden to the carrier.

It would be difficult to try to estimate the average cost per

foot of private sidings in this country but they certainly cost a large sum of money in the aggregate.

Many private sidings have an element of commercial risk, for no private business is proof against failure. If a railroad company did all the work and provided all of the material for a private siding and the industry for which such siding was provided should fail there would be a loss. It is true that the railroad would still be in possession of all the metal, but the cost of the grading would be absolutely lost and the ties would have suffered some deterioration. Where the cost of private sidings is shared with the shipper on a reasonable basis the loss to the railroad company is greatly reduced in case of failure of the plant.

There is a growing evil in regard to private sidings which is being fostered by competitive conditions. At competitive points, each railroad is obliged to follow its competitor in furnishing private sidings free of charge; and in many cases where this is done the volume of business scarcely justifies a private track at all. If shippers get them free at competitive points they ought to get them free at all other points; otherwise there is discrimination. Although it is perhaps a bold statement for a railroad officer to make, it is only simple justice to require that all private sidings should be built and used on one uniform basis, in order to avoid discrimination. It is puerile to say that a private siding is not a valuable privilege and that a shipper who has paid no part of the original cost, is not receiving a decided advantage over another shipper who has paid part of the cost of a private siding. Furthermore, as has been shown, shippers who are provided with private sidings have a decided advantage in service over those who have none.

The difficulty of providing a remedy is not beyond reach. There are two distinct features which stand sharply outlined; first, the need for protecting the railroads of this country against the great cost of private sidings; and, second, the need of placing all shippers upon an equality and requiring shippers who are provided with private sidings, to pay something for the more convenient service. In other words, the first feature refers to the original cost of private sidings and the second refers to the cost of service on them.

The principal difficulty in arriving at a proper solution would be the attitude of the public as expressed through its legislatures and Congress. The railroads justly view with dread the possible outcome of any legislation, even if they feel that the necessity for it exists. Some legislation has already been attempted in regard to private sidings, which leaves the railroads in a worse position than ever, as it not only interferes with their bargaining power but also gives them the worst of the bargain. Personally, the writer believes that the restriction against all form of bargaining, upon the part of the railroads, has gone so far that they would be better off to have the question of private sidings governed by law if it could be fairly and properly accomplished. But there would be a danger at the outset, the obligation to invariably furnish a siding if the applicant met the legal requirements. Any legal requirements, therefore, should be made sufficient to prevent private sidings being installed unless clearly justified as necessary to the shipper and as furnishing adequate business to the railroad. They should not be located under objectionable physical conditions or where they might endanger train operation. Private sidings are not in themselves an evil. It would be most unfortunate to hinder their expansion where they are justified but it would be equally an economic misfortune to allow them where they are not justified. It would often be

difficult to estimate the volume of prospective business, but possibly the test could be left with the shipper. If he were required to pay for the entire cost of installation and subsequent maintenance, and furnish bond to guarantee the removal of that portion of the track lying on the property of the railroad company, when the private siding were abandoned, he would be confronted with a very definite question.

As a further test to guard against superfluous sidings we may introduce the question of cost of service. It is hard to conceive that, in spite of the great convenience of a private siding, a patron would apply for one knowing that he would have to sustain the entire expense of installation, maintenance, and removal and still further to have to pay for all services furnished to and from his private siding, unless he knew that he had sufficient business to justify the outlay. At the present time the railroads view the handling of a carload shipment from a private siding in the same light as a carload shipment from a public team track at the nearest station and, further, view the process of picking up or setting off a car in each case as part of the service incidental to the main line haul. In many cases the service at a private siding does not cost the railroad any more than if the same service were performed at a public track; but, on the other hand, there are many cases where the service does cost radically more at a private siding. In every case, however, the possessor of a private siding enjoys the saving in drayage. The discrimination in his favor may not be unjust or unlawful but still it exists and there is no reason why some of those privileges should not be curtailed and a nearer approach to equality be established.

The question of what amount should be charged for service at a private siding would undoubtedly have to be carefully considered by a Commission of practical men—part railroad officers, and part experienced shippers. A good basing point might be the saving in drayage upon each carload, loaded or unloaded at a private siding, or each shipment of l.c.l. packages switched between the private siding and the railroad warehouse, less the further consideration of the original expense incurred in obtaining, keeping and removing the private siding. In all cases the cost of service at a private siding should be added to the main line haul, or the switching charge (if there be such a charge).

Summing up the suggestions outlined, it would seem that the requirement that a shipper should pay for the entire cost of installation, maintenance, and removal of a private siding and further, pay a reasonable charge for service thereon, would afford the railroads a protection which they badly need and equalize conditions between all shippers or consignees. The correction of any evil in railroad operation ultimately benefits the general public, and there is no reason why the elimination, or reduction, of the private siding evil should be any exception to the general rule.

## THE RAILWAY BUSINESS ASSOCIATION DINNER

With the President of the United States as its guest the Railway Business Association on January 27 began its eighth year with a meeting in the Waldorf-Astoria Hotel, New York, attended by an audience of 1,250 guests, comprising perhaps the largest number of executives of transportation and large manufacturing and banking institutions ever gathered together under one roof in this country.

The Waldorf ball room was hung with American flags to the ceiling, which was itself one immense flag.

President Geo. A. Post of the Association, in his introductory remarks, which Mr. Wilson had previously read and approved, quoted from the President's letter to Frank Trumbull the following passage:

"The laws must speak plainly and effectively against whatever is wrong, or against the public interest, and these laws must be observed; for the rest, and within the sphere of legitimate enterprise, we must all stand as one to see justice done and all fair assistance rendered, and rendered ungrudgingly"; and also from the President's recent address to Congress:

"The transportation problem is an exceedingly serious and pressing one in this country. There has from time to time of late been reason to fear that our railroads would not much longer be able to cope with it successfully, as at present equipped and co-ordinated. . . . It seems to me that it might be the part of wisdom, therefore, before further legislation in this field is attempted, to look at the whole problem of co-ordination and efficiency in the full light of a fresh assessment of circumstance and opinion, as a guide to dealing with the several parts of it."

[The resolution for such an inquiry was being pressed by the President's colleagues in the Senate on the day he left Washington to attend the Railway Business Association meeting.]

The address of the President dealt entirely with preparation for national defense. It was printed in full in the newspapers. The audience gave the President a very warm welcome and gave every evidence throughout the address of agreement with the sentiments expressed as well as of enjoyment of the witty and humorous passages. Applause was particularly hearty when a tribute was paid to the Republican leader in the House, Representative James R. Mann, for his attitude in declaring the preparedness question one which should rise above partisanship.

The selection of the Railway Business Association as the body before which the President would begin his series of non-partisan appeals served to crowd the press gallery with representatives of newspapers and news associations.

On President Post's right sat President Wilson and next to him Frank Trumbull, with these other guests on their right: Wm. L. Saunders, vice-chairman U. S. Naval Consulting Board; Jos. P. Tumulty, secretary to the President; James M. Cox, former governor of Ohio; William G. Besler, president Central of New Jersey; John H. Fahey, president Chamber of Commerce of United States; Cary T. Grayson, white house physician; Burns D. Caldwell, president Wells, Fargo & Co.; Martin A. Knapp, judge United States Circuit Court; Willard A. Smith, president Railway Review; Geo. A. Viehmann, president New Jersey state Chamber of Commerce; Irving T. Bush, president Bush Terminal Co.; F. B. Lynch; Otto Carmichael, and Theodore Rousseau, secretary to the mayor of the City of New York.

On President Post's left was Mayor John Purroy Mitchel of New York, and the following: Frederick D. Underwood, president, Erie; Warren G. Harding, United States senator from Ohio; Samuel Rea, president Pennsylvania Railroad; W. D. B. Ainey, chairman Pennsylvania Public Service Commission; Alfred H. Smith, president New York Central Lines; Jacob H. Schiff, Kuhn, Loeb & Co.; Wm. T. Noonan, president Buffalo, Rochester & Pittsburgh; Adrian Iselin; Charles R. Hudson, National Railways of Mexico; Geo. M. LaMonte, commissioner Banking and Insurance of New Jersey; Samuel O. Dunn, editor *Railway Age Gazette*; Seymour Van Santvoord, chairman Public Service Commission of New York, Second district; George C. Boldt, president Waldorf-Astoria Co.; Moorhead C. Kennedy, president Cumberland Valley Railroad, and Col. George Pope, president National Association of Manufacturers.

Mrs. Wilson occupied a second balcony box with ladies and was cordially greeted upon her entrance, the audience rising, cheering and giving the Chautauqua salute.

The diners had at their plates copies of the resolutions adopted by the Association at its business meeting in the afternoon. The resolutions are as follows:

### THE CONGRESSIONAL INQUIRY

(1) The president has proposed and the senate committee has unanimously recommended an inquiry into the whole subject of railway regulation. Such an inquiry is a national necessity. Successful regulation, whether of transportation or of other business, is essential if private industry and individual initiative are to continue. We believe regulation will succeed. It must. But successful regulation is regulation under which those regulated can thrive and grow; and this is not yet assured



to railways. Financial results of governmental action officially concern no arm of the government. In peace or in war national welfare demands transportation facilities that can respond to emergencies. Many of our roads can not even meet the traffic requirements of a normal national growth. The narrowing of net income has too long been neglected.

With such an inquiry the railway and cognate industrial interests should co-operate in a spirit acceptable to those in official authority. We hail many signs that the public is ready to discuss the problem with an eye vigilant for public rights, but anxious also for railway prosperity. Organized business animated by that aim can lend strong aid in disseminating information and reporting public opinion to congress.

#### AVERAGE CONDITIONS THE TEST

(2) Every regional rate case, rates being the same for all roads, brings opposition on the ground that the most prosperous lines will gain revenue and that some of the least prosperous were impoverished through ill-judged location or through defects of management. We urge solutions based on the average condition of the average road. By that method the relief given to the neediest is meagre for the very reason that the condition of the least needy goes to make up the average by which necessity is tested; whereas the most prosperous company, taking pot-luck with the average, merely has that reward of foresighted location, moderate capitalization and good management which it is in the general interest to encourage.

#### NEED FOR ADEQUATE SURPLUS

(3) Many still suppose that large increases in tonnage and earnings dispose of the need for higher rates. The contrary is the fact. When expenses, as in late years, increase faster than revenue, net income, available for additions and betterments, surplus and dividends, tends to decline. The capital invested meantime has earned in that case less than nothing. What is required to give the railroads stability is a fabric of rates which in years of large tonnage will furnish a surplus to tide over slim years and hence a basis for new capital offerings.

#### MAIL PAY

(4) Business bodies from ocean to ocean have now urged congress to insure the carriers adequate mail pay. Sentiment is pervasive that injustice is done in compelling the roads to carry without compensation the increase in volume of matter which accrues between quadrennial weighings. The ideal method would be that employed in measuring freight service and postage charges—to weigh each parcel. A substantial approach, however, toward exactness would be to make weighings annual. Pay ought also without further delay to take cognizance of "side and terminal" service and use of apartments in baggage cars. As the general appropriation bill for the Post Office Department, postponed from the last congress, appears to be approaching definite form at this time we renew our earnest recommendation that the method of paying the railways shall be dealt with separately and not as a rider.

#### CREW AND TRAIN BILLS

(5) We regret that extra-man crew laws still remain upon the statute books of some of the states. They ought to be repealed. A score of state legislatures wisely defeated bills to limit the length of trains. Size of crews and length of trains should be regulated, when necessary, by permanent commissions, who have continuous experience and information, and can consider actual conditions on various roads and at various times. Mandatory statutes should not deal with these subjects.

#### TRESPASS

(6) School authorities and factory officers in many states are asking state legislatures to enact and magistrates to enforce strict penalties for trespass on railway property. This evil

entails annually a national loss of life frightful in number and especially deplorable in that a large proportion of victims are working people and children. Local obstacles should not be permitted to defeat this much-needed measure of safety to human life, not to say of economy and efficiency of railroads, to which trespass is a hindrance in operation and a heavy cost in money.

#### RAILWAYS AND THE PUBLIC

(7) We congratulate the railways upon the marked advance which they have made in methods of dealing with the public and with governmental authorities. The managers now fully recognize that general questions affecting their properties must be explained patiently and with good humor to the citizens at large, and technical questions presented with knowledge and candor to legislative committees and regulatory bodies. Government touches the railways at many points. One by one the roads have evolved out of experience and counsel special organizations, permanent or temporary, to deal with each phase. This method and spirit have been substantial factors in the growing good-will of people, press and public officials.

With the resolutions was a list of members of the Association, which had been revised since the dinner menu went to press and which included at the end a supplementary group of concerns which had enrolled since January 1, which were these: Rail Joint Co., New York; Bigelow & Dowse Co., Boston; Milton Mfg. Co., Milton, Pa.; International Steam Pump Co., New York; James Spear Stove Heating Co., Philadelphia; Frank B. Stone, Chicago; Greenfield Tap & Die Corp'n, Greenfield, Mass.; Hires Turner Glass Co., Philadelphia, Pa.; Consolidation Coal Co., Baltimore; Standard Varnish Works, Chicago; Geo. LaMonte & Son, New York; Shapleigh Hardware Co., St. Louis; Pratt & Lambert Co., Inc., Buffalo; Kirby Lumber Co., Houston, Texas; Solvay Process Co., Syracuse, N. Y.; Pollak Steel Co., Cincinnati, O.; Valentine & Co., New York; Consolidated Coal Co. of St. Louis; American Flexible Bolt Co.; Quaker City Rubber Co., Philadelphia; Tower Mfg. & Novelty Co., New York; Upson Nut Co., Cleveland; Goodrich, B. F., Co., Akron; Imperial Appliance Co., Chicago; Boss Nut Co., Chicago; American Malleable Castings Co., Marion, O.; American Bridge Company, Chicago; Computing Tabulating Recording Co.; Specification Brush Co., New York.

President Post opened the business meeting earlier in the day with an address in which he asked the members to "declare anew our fealty to those principles of action which on previous voyages have brought us safe into port." Nobody concerned, he said, need have the slightest anxiety that the organization will go into politics, as its constitution and its practice forbid. The association would be found industriously minding its own business. This did not mean that the organization was hermetically sealed in an air-tight compartment. It had a lively sense of gratitude, had tried to be a good fellow, and in that spirit had joined the Chamber of Commerce of the United States and had co-operated with other associations wherever consistent with its own limitations. He explained the painstaking deliberation with which policies and utterances of the association are considered by the officers and remarked, "You never have to do any crying over milk that you don't spill." Nobody, he declared, will find the association making misstatements with its eyes open. He paid a high compliment to the Bureau of Railway Economics and to its standard of propriety in the use of statistics and said that the Railway Business Association never had used a computation without submitting it to the Bureau of Railway Economics and never had employed one against that Bureau's advice.

These officers were elected:

President, Geo. A. Post, New York; Vice-Presidents, W. H. Cottingham, Cleveland; W. B. Leach, Boston; E. B. Leigh, Chicago; Henry Elliott, East St. Louis; J. S. Coffin, New York; Irving T. Hartz, Chicago; J. C. Bradley, Buffalo; Treasurer, M. S. Clayton.

# The Canadian Northern Extension to Vancouver

The Details of the Heavy Construction Work Involved in Building Through This Mountainous Country

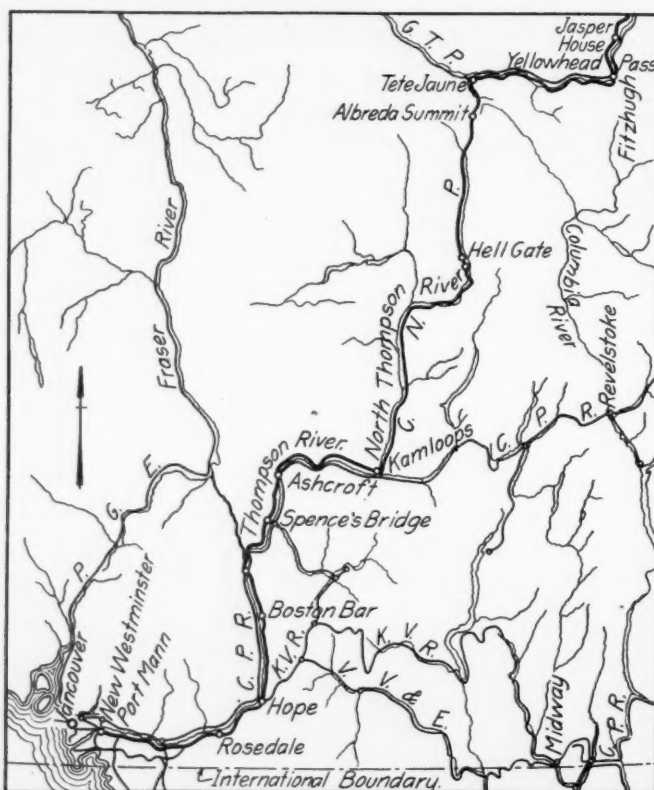
By V. J. Boland

Assistant to Chief Engineer, Canadian Northern Pacific, Vancouver, B. C.

It was discovered early that the Yellowhead or Tete Jaune pass, in the northern part of the Canadian Rocky mountains presented the least elevation of all the numerous passes in the American Cordillera, and gave also the best approach to the waterways and the valleys of the interior. When, therefore, the Canadian Northern projected its transcontinental railroad from the middle west into the mountain province of British Columbia, it naturally selected the Yellowhead pass for the route through the Rocky mountains. The wisdom of this selection coupled with its success in finding ideal river grades leaves this company at the

distance of 12 miles, temporary arrangements have been made with the Great Northern for joint use of its tracks and facilities until the entrance into Vancouver has been decided on.

The investigation and location of the route was started in the spring of 1909, and from the data obtained, it was decided to

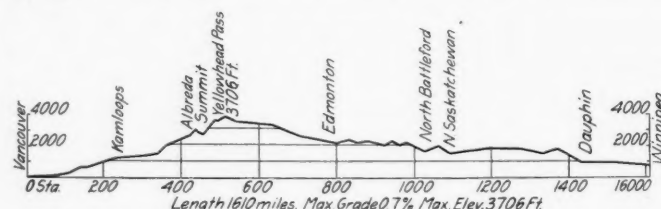


Route of the Canadian Northern in British Columbia

completion of this undertaking the possessor of a road much lower in grade than any other transcontinental road on the American continent.

The route followed by the Pacific section of the Canadian Northern system in reaching tidewater from the interior of Canada has long been well known by reason of the surveys made under the direction of the late Sir Sanford Fleming, in the years 1872 to 1880, on behalf of the Canadian Government. Sir Sanford recommended this route, but it was turned down by the federal government and the Kicking Horse pass route over which the Canadian Pacific now operates, was substituted in its place, doubtless for the reason that the then-known mineral resources of British Columbia lay mostly in the southern region.

The Pacific section of the Canadian Northern transcontinental railway enters British Columbia at Yellowhead pass, proceeds by way of Tete Jaune Cache, Cranberry lake, Albreda summit and the North Thompson river to Kamloops, thence by way of the Thompson and Fraser rivers, to the lower delta of the Fraser river. It terminates at present at Port Mann, a distance of 500 miles from Yellowhead pass. From Port Mann to Vancouver, a



Profile of the Canadian Northern West of Winnipeg

adopt a 0.4 per cent grade compensated as a maximum from Kamloops to mile 164 north; from that point to Albreda summit, mile 181 (the water shed between the Fraser and Thompson rivers), 0.7 per cent compensated; from Albreda summit to Cranberry lake, mile 202, 0.4 per cent compensated, and from Cranberry lake to the west end of Moose lake, mile 229, 0.7 per cent compensated. At this point the location of this railroad and that of the Grand Trunk Pacific converged and a double track location along Moose lake was arranged. This double track location extended some 15 miles along the lake to the east end where the two lines again separated, the Grand Trunk Pacific continuing on the north side of the valley and the Canadian Northern Pacific



The Kamloops Lake Line

crossing to the south side and rising on a 0.4 per cent compensated grade to Yellowhead pass. The location survey between Port Mann and Kamloops was commenced in the Fraser canyon at Yale and an excellent location was obtained, the maximum grade being 0.4 per cent, compensated. The following is a summary of the grades obtained in different operating divisions:

| From          | To            | Miles | Eastbound Ruling Grade | Westbound Ruling Grade            |
|---------------|---------------|-------|------------------------|-----------------------------------|
| Port Mann     | Boston Bar    | 113   | 0.40% 6.9 Miles        | 8 Vel. Grades Level and Down Hill |
| Boston Bar    | Kamloops Jct. | 126   | 0.35% 3.4 Miles        | 0.40% 3 Miles                     |
| Kamloops Jct. | Blue R.       | 141   | 0.40% 30 Miles         | 0.2 % 1.8 Miles                   |
| Blue R.       | Yellowhead    | 115   | 0.70% 37 Miles         | 0.40% 11.3 Miles                  |

In the 500 miles west from Yellowhead summit to Port Mann there are only 22.3 miles of adverse grades, or 4.1½ per cent of the total distance. The maximum curvature throughout is 8 deg., and this has been used on rare occasions. There were no particular engineering difficulties encountered in the survey of the



route other than those of transportation and supplies. The country west of Albreda summit was at the time of the surveys most accessible from Kamloops. This, however, involved building 100 miles of pack trail.

#### CONSTRUCTION STARTED IN 1910

The construction on the first contract from Port Mann to Hope was started in July, 1910; on the second contract, from Hope to Kamloops, in August, 1911, and on the third contract from Kamloops to Yellowhead pass, in May, 1912. The construc-



Mile 116 in the Fraser Canyon

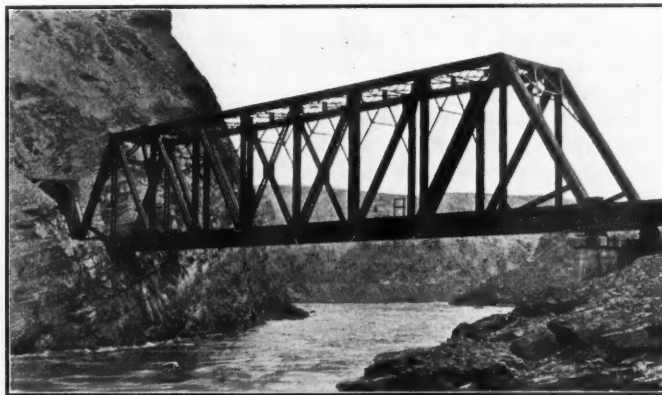
tion, taken as a whole for a line through mountain regions, was fairly light. From Port Mann to Rosedale, mile 47, the grading was largely prairie work, although spurs from the main mountain ranges gave rise to heavy work at intervals. From Rosedale to Hope, mile 77, the work became heavier as the valley narrowed and still more so from Hope to Yale, mile 91. At Yale the Fraser canyon proper is entered by a 2087-ft. rock tunnel under Yale bluff, and it is here that the heaviest rock work on the whole line was encountered, the heaviest mile running to \$327,300, without fence, telegraph or track. From Yale to Boston Bar, a dis-



Paralleling the Grand Trunk Pacific. Material Carried Overhead and Dumped Into the River

tance of 26 miles, the rock work was of the heaviest nature and there are in all 15 rock tunnels aggregating 8,321 ft. The rock is mostly granite and bluff follows bluff, every one with almost perpendicular faces. The line was largely cut out of the solid rock, giving a solid roadbed, but where fills were required, with slopes

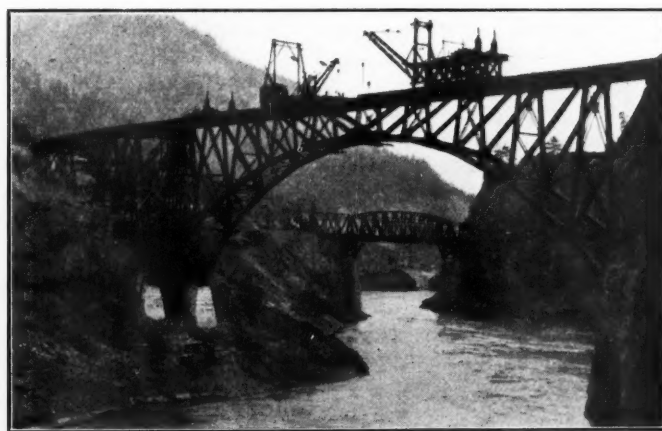
running into the river, great care was taken to deposit the largest material to withstand the terrific force of high water in the Fraser river. From mile 128 to Savona, mile 218, at the foot of Kamloops lake, there was more steam shovel work than anything else. At Jackass mountain, mile 134 to 134½, however,



Through Truss Bridge Over the Thompson River at the Mouth of a Tunnel

rock was encountered and two tunnels aggregating 548 ft. were driven. One of these tunnels was carried into the river by an enormous slide in the hillside, caused presumably by the heavy rains occurred about six weeks after the tunnel was finished. Whether the hill slid on the shale seam, or whether the clay swollen by the heavy rains exerted excessive pressure on the tunnel timbers, causing them to collapse and thus releasing the toe of the hill, it is impossible to say. The slope has now been dressed off leaving an open cut. The heaviest yardage in this locality was in the neighborhood of Tilton creek, mile 130, where one large fill aggregated 414,000 cu. yd.

The line crosses the Fraser at Cisco to follow the north or left hand bank, thus avoiding the Canadian Pacific. It recrosses again at Lytton, and three quarters of a mile further on crosses the mouth of the Thompson river. A section of heavy work was met at Gladwin's Bluff at mile 149 to 151, involving 478,946



Steel Arch Bridge Over the Fraser River

cu. yd. of excavation and 990 ft. of tunnel. The average cost per mile was \$222,650, without track, telegraph or fence. Just beyond the Gladwin bluffs the line was constructed along the top of a rock cliff and at the foot of immense gravel slopes, which rise at an angle of between one and one-quarter, and one and one half to one, to a height of some 1,200 ft. This gravel which was well cemented was excavated by the hydraulic method.

Bad bluffs were encountered at Thompson and Drynoch. The rock at Thompson was more broken than that at Gladwin and a huge slide occurred as the grade was being built, necessitating the removal of about 100,000 cu. yd. of additional material.

Drynoch Bluff, mile 163, was a most dangerous place on which

to locate and offered the usual difficulties in construction. It has three short tunnels and the open slope is surmounted by a good deal of gravel and other debris. At mile 184 the line crosses onto the Canadian Pacific side of the Thompson river and recrosses at mile 188.5, passing direct from the bridge into a tunnel 1,319 ft. long in the famous Black canyon. Just east of this tunnel there was a slide. A spring which made its appearance about one-third of the way down the slide was tapped by a water tunnel and led to an adjacent gully. At every high water, however, the slide moves and has moved considerably since the records were first taken. Some two miles further east the grade was first constructed at the foot of the bluff, partly in cut and partly in fill, the latter standing well until the flood of 1913. An extensive crib was constructed at this place. From Ashcroft (mile 194), to Savona (mile 218), it was almost all steam shovel work in glacial clay. Rock work was again encountered along Kamloops lake, including a tunnel 2,835 feet long at Battle Bluffs.

At mile 244, the line crosses to the east bank of the North Thompson river to avoid heavy clay bluffs. From Kamloops Junction (mile 243) to Birch island (mile 324) the work was easy on the whole, although occasionally the line hit a rock slope. From Birch island to the third crossing of the Thompson river at mile 339 there was heavy steam shovel work along the supported grade. From mile 330 to the fourth crossing at mile 351, although the work was largely steam shovel material, it was entirely carried out by hand, owing to the difficulty of getting in machinery. From mile 360 to 376 (Canoe Landing) was the heaviest portion of the North Thompson river work, particularly at Hell Gate. From mile 417 to Albreda summit, the work was very light.

The two crossings and recrossings of the North Thompson were to avoid heavy work, and to get better alinement. The first two of these crossings are of 80-ft. deck girders, supported on pile piers, consisting of groups of 32 piles, capped by a three-course grillage of 12 in. by 12 in. timbers, and topped by one-inch steel plates. Placed about the piling is a timber crib filled with rock. The third crossing is a temporary pile bridge below the permanent crossing which is now being built. The other two crossings are low, short plate bridges. Canoe river is crossed on a Howe truss bridge. No really heavy work was encountered until the Fraser valley is entered at mile 453. From this point the Grand Trunk is paralleled and the two roads are never more than a few hundred yards apart. From mile 456 to Moose lake (mile 472) there were some very heavy rock cuts. Difficulties were particularly great for the last ten miles, owing to the fact that the grade had to be constructed immediately above the Grand Trunk, then in operation. All mucking over this portion, from the Canadian Northern, had to be carried across the Grand Trunk on a trestle and shot direct into the Fraser river. Six of these chutes were constructed.

#### GRADING

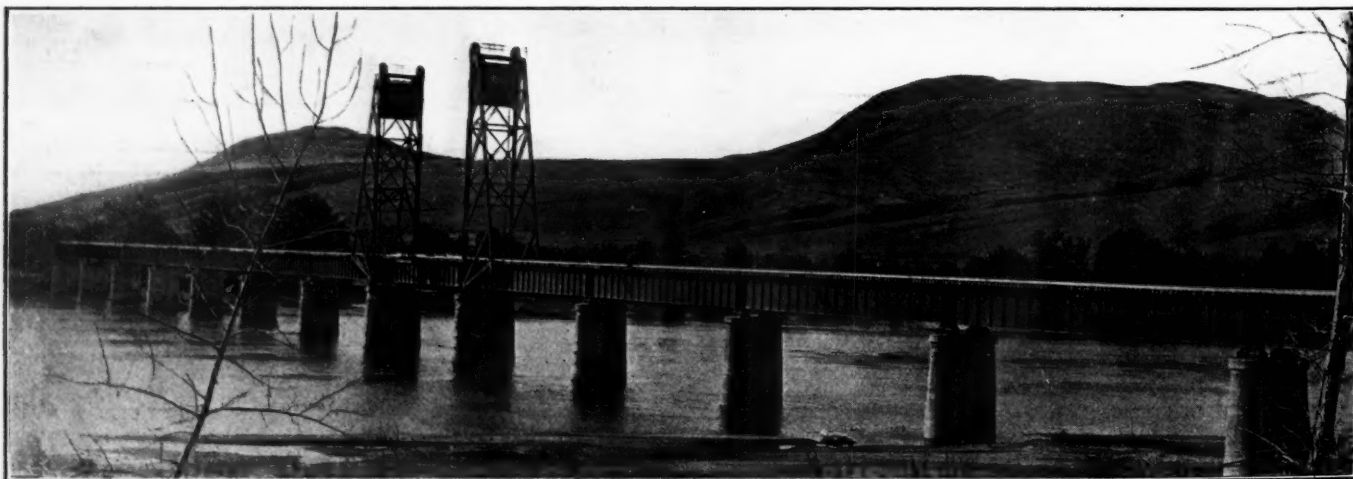
The actual work of grading on this line was done by sub-

contractors who did the steam shovel and hydraulic work themselves but sub-let other portions of their contracts to stationmen. Great difficulty was experienced in preventing the contractors from using too much powder. The stationman is strongly tempted to over shoot with a view of breaking up the rock as small as possible, and thus save handling where the material was wasted direct into the rivers whose course the railway followed. The subcontractor has a little inducement to check the stationman from over-shooting for the more powder the stationman uses, the more profit there is for the subcontractor, who supplied the stationmen with powder. Generally the use of large blasts in seams, coyote holes, etc., are excluded in standard specifications, but was not found practical on this work. The engineer in charge of the work would make a point of warning the contractor against the results of heavy shooting and holding him strictly to account if his warning and instructions were neglected. It was found that more than 1 lb. to  $1\frac{1}{4}$  lb. of explosive per cubic yard of excavation was needed in very rare cases, and in ordinary sandstone and limestone, if at all seamed,  $\frac{3}{4}$  lb. per cu. yd. would generally be sufficient. For shales  $\frac{1}{2}$  lb. or less was plenty.

#### STEEL BRIDGES

There are in all throughout British Columbia, in the main line of this railway, 29 steel bridges with an aggregate length of some 12,614 ft. No special comment is required with the exception of the crossing of the Fraser river at Cisco, 140 miles east of New Westminster, and the first crossing of the North Thompson river at Kamloops, mile 243. The Cisco bridge, which consists of a 425-ft. steel arch with a steel viaduct approach on one end, is 809 ft. in length and 198 ft. above low water level. Erection was carried from both ends by the use of a steel cable stretched across the river. The derrick required for the erection of the eastern section of the arch was taken across on this cable in sections, the steel work being handled in the same manner. The arch span was erected by the cantilever system from both ends, 1,200 tons of steel rails being used as a counter-weight at the west end, and the east end being anchored into the rock.

The first crossing of the North Thompson river at Kamloops was spanned by a deck plate girder bridge 1,209 ft. in length, the central span of which is 93 ft. lift span, this being the first in the Dominion having a vertical lift. The span which weighs 236,000 lb., can be raised some 56 ft. above high water level. It is balanced by counter weights attached to cables which pass over sheaves at the top of steel towers. There are four  $1\frac{1}{4}$  in. cables at each corner of the span and equalizers are used to distribute the load properly to each rope. The span is guided along the sides of the front tower columns during its movement. This bridge and all others between Port Mann and Kamloops, were designed by Waddell & Harrington, Kansas City, Mo. The location and construction of this line has been under the direction of T. H. White, chief engineer of the Canadian Northern Pacific.



First Crossing of the North Thompson River with 93-ft. Lift Span



## General News Department

The Southern Pacific Railroad of Mexico is now in operation from Nogales, on the line between Arizona and Sonora, southward to Presidio, 748 miles from the boundary; and the line from Naco, Ariz., is in operation to Cananea, 20 miles.

At Bluefield, W. Va., January 26, a carload of black powder, standing in the yard of the Norfolk & Western, exploded, injuring 30 or more persons, five of them seriously. Three cars nearby, containing dynamite, withstood the shock and were not injured.

The transcontinental passenger train, the "Olympian" on the Chicago, Milwaukee & St. Paul, on January 25, was operated with an electric locomotive for 115 miles over the completed first unit of the St. Paul's electrified line between Harlowton, Mont., and Avery, Idaho.

The International & Great Northern has entered on a "special honor roll" the names of 21 locomotive engineers in recognition of the fact that the new through train, the "Sunshine Special," in the operation of which they were the chief factors, made a perfect time-record for the first month of its career.

Sir Horatio Arthur Yorke, C.B., formerly lieutenant colonel in the Royal Engineers and chief inspector of the British Board of Trade has been chosen a director of the Grand Trunk Railway of Canada, in place of the late Lord Welby. Sir Arthur is already a director of the Great Western of England and of the London, Chatham & Dover.

The Colorado State Industrial Commission has taken jurisdiction in the controversy between the Denver & Rio Grande and its machinists, car men and other employees in the motive power department, who demanded an increase in wages of four cents an hour, which was refused by the company. The commission will make an investigation and report its findings as a proposed basis for settlement, although the findings will not be binding.

Two of the men injured in the collision on the Nashville, Chattanooga & St. Louis near Rockledge, Tenn., December 23 (*Railway Age Gazette*, January 21) have entered suit in court at Nashville to recover damages; and the Western Union Telegraph Company, as well as the railroad company, is named as a defendant, the plaintiff alleging that the telegraph company's wires are believed to have been responsible for the signal failure which caused this collision.

The New York State Civil Service Commission announces examinations February 26 for the positions of freight rate clerk in the department of highways, salary, at the beginning, \$1,200 a year; inspector of equipment for the Public Service Commission, First district, salary \$900 to \$1,200; junior electrical engineer for the same commission, same salary; transit inspector, same. The inspector of equipment must have had six years' practical experience in car house or car shop practice.

In the United States Court at Louisville, Ky., last Saturday, Judge Walter Evans decided in favor of the Western Union Telegraph Company in its suit to continue its occupancy of the right of way of the Louisville & Nashville Railroad. The claim of the railroad company that the presence of the poles and wires on the land adjacent to the tracks interfered with the proper operation of trains was denied. The amount of rent to be paid by the Western Union for the privilege will be decided by a jury.

The Post Office Appropriation bill for the next fiscal year, as reported to the Lower House of Congress on Monday of this week, contains a provision authorizing the postmaster general to pay for transportation of the mails on railways on the basis of space instead of weight. There is also a provision authorizing the Interstate Commerce Commission to investigate the reasonableness of railway mail pay under the proposed new system, either on the initiative of the postmaster general or on

the filing of a petition on the part of 51 per cent of the mail carrying roads. The commission is to report to Congress on the results of any such investigation, but it is not authorized to change rates.

### Safety Medal Awarded

The Harriman Memorial medals, awarded annually under the direction of the American Museum of Safety, New York City, go this year as follows: The gold medal to the Cincinnati, New Orleans & Texas Pacific; and for the Grand Rapids & Indiana there is honorable mention. The silver replica of the medal goes to the Scioto division of the Norfolk & Western; and the bronze replica, given annually to the employee who makes the most notable individual record, goes to J. P. O'Brien, a switchman of the Chicago & Eastern Illinois. O'Brien works for that company at Dolton, near Chicago, and has been in the service of the road 20 years.

### Luncheons for All

On those trains of the Chesapeake & Ohio in which there is a dining car, passengers can now have food served in the day coaches. The waiters of the dining car, at such times during meal hours as they can be spared from the tables, go through the coaches carrying trays containing coffee in tin cups, ham and tongue sandwiches and fruit. The prices are less than in the dining car; as, for example, ten cents for coffee, the same for sandwiches and five cents for fruit. This new service has been in effect a little over a month and the company has already received many favorable comments, indicating that passengers have found much satisfaction in it.

### Engineers Organize For Preparedness

In line with President Wilson's plan for national preparedness, and under the direction of Major-General Leonard Wood, United States Army, representatives of the four national engineering societies have adopted a plan to organize civilian engineers into a national reserve corps of engineers, so that in case of necessity these engineers could immediately be placed in charge of construction of coast and other defenses, releasing the regular army engineers for their usual duties.

The American Society of Civil Engineers, American Institute of Mining Engineers, American Society of Mechanical Engineers, and the American Institute of Electrical Engineers have a membership of approximately 30,000.

Officers of the United States Army have consented to deliver a series of seven lectures on engineering subjects, preparatory to permanent organization, and to assist those who desire to enter the engineering battalion which is to be formed at Plattsburgh. The first lecture, on Monday, February 14, will be by Captain Thomas M. Robins, Corps of Engineers. He will speak on the organization and duties of engineers in war, and what engineers in civil life will be called upon to do in the defense of the United States.

The other lectures will follow on successive Mondays. The last of the seven, on March 27, 1916, will also be given by Captain Robins, and will deal with the construction, maintenance and operation of railways under military control, and the construction and operation of armored trains.

The lecture will be given in the auditorium of the Engineering Societies building, 29 West 39th street, New York. The lectures are free, and all engineers, whether or not members of the above societies, are invited to be present, without any further obligation on their part.

### "To the New Man"

The Grand Trunk has issued a pamphlet of 15 rules on safety precautions addressed "To the New Man," and it is on a sheet

the size of the ordinary book of rules, and can be pasted into that book. The introduction says that there are conductors, enginemen and other employees on the Grand Trunk who have worked for the road from 20 to 30 years without being injured and without causing injury to any other employee; and the new man—the company assumes that he is the right kind of man—is expected to put himself into this class. The Grand Trunk "does not want any one in its service to take an unnecessary chance in the performance of his duty for the sake of saving time, or for any other reason." The fifteenth and last rule says: "Make yourself thoroughly familiar with the Book of Rules. It represents the best methods of railway operation which we have yet been able to devise, as a result of years of study and experience by the most competent men in the various branches of the service. Remember that every rule in the book exists because experience first showed such rule to be necessary, and that you will be expected to comply with the rules—all of them—and not just those you may think you ought to comply with. You should find a study of the history, reason for and construction of the rules a most interesting, as well as profitable, study."

#### Railways Affected by Floods and Snow

Railways at many points in the United States have been seriously affected by floods and unusually heavy snowstorms during the past week or ten days. Traffic has been delayed, in some cases for several days, by heavy snow in North Dakota, in the Cascade mountains in Washington, in the Canadian Northwest, in Idaho and Montana and in Colorado. The flood conditions in southern California resulting from the heavy rains from January 14 to 17 have cut all railway lines into Los Angeles, and the conditions resulting from floods in the vicinity of Yuma, Ariz., were described in last week's issue. The Southern Pacific, which for several days had been obliged to operate through transcontinental trains over the Atchison, Topeka & Santa Fe, on account of the floods at Yuma, was able to restore through service on January 27. A cloudburst in southern California on January 27 resulted in additional floods in the San Luis-Rey, San Pasquale and Otay valleys in the vicinity of San Diego; and on January 28 a dam in the San Diego water system burst, causing the death of over 50 persons, besides completely cutting off communication between San Diego and neighboring cities. The Atchison, Topeka & Santa Fe line between Fullerton and San Diego, which was affected by the earlier floods, suffered additional damage in the floods of last week, and it will probably be several days before service is restored. The Santa Fe is operating into Los Angeles by its Riverside line, and the Pasadena line has been cut and restored two or three times.

Floods have also been reported during the past few days in eastern Arkansas, eastern Kansas, Missouri and northeastern Oklahoma, in the valleys of the Mississippi, Missouri and Arkansas rivers and their tributaries, resulting in a great deal of damage to railroad track and bridges besides interfering with service; and on Monday of this week several rivers flowing into the Ohio had reached such a stage that serious conditions were threatened. On Monday, the levee at West Hickman, Ky., on the Mississippi river, gave way and a large district was flooded.

#### The Alaskan Railway

Construction work on the Alaskan government railway was begun at Anchorage, located on Knik Arm of Cook Inlet in May of last year. This point was selected as it was at the head of deep water navigation and was the most convenient point for the landing and distribution of supplies and construction material. The main line of survey from Seward to Fairbanks passes within about five miles of this point, and the intervening country is favorable for the construction of a railroad. The work outlined for 1915 was the building of this five-mile connecting line and about 30 miles of the main line, the grading for which was completed early in November. At the present time track has been laid on about 15 miles of this line.

As it was necessary to erect several fairly large wooden bridges across streams it was found that the most economical method was to frame the larger timbers in the material yard at Anchorage and to then transport them on cars to the bridge site. This condition arose from the very heavy expense incurred in trans-

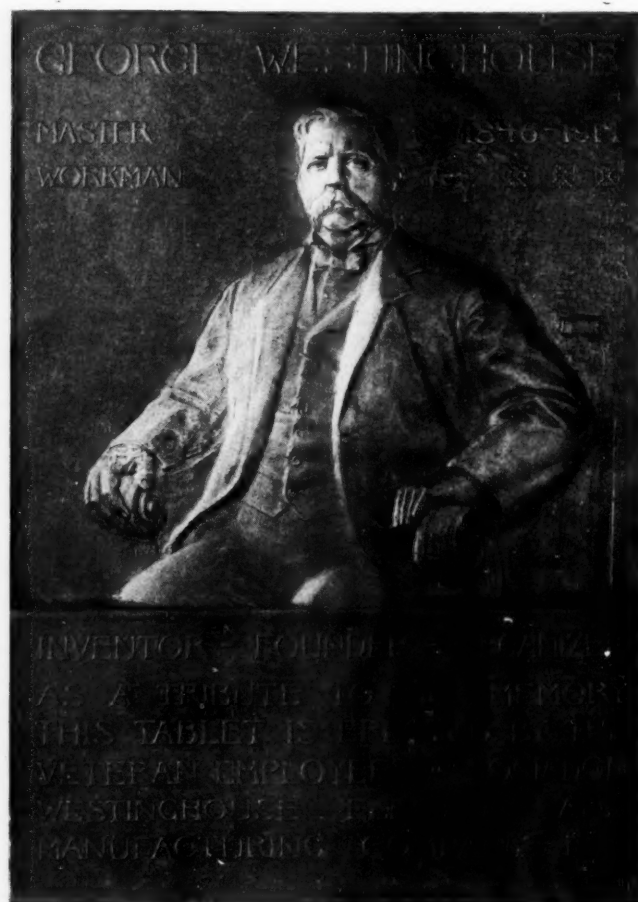
portation by wagon over the soft roads. The piling for the bridge foundations at these points is secured in the immediate vicinity, and is driven by the time the track reaches the bridge. A fairly large bridge has recently been erected at Eagle river, about 13 miles from Anchorage, and track laying is now proceeding beyond that point. The end of the grading is now within 40 miles of the Matanuska coal fields, and it is hoped to reach these fields during the present year.

The earth encountered so far in the grading work is mostly gravel and loose rock with a small amount of fairly hard sandstone ledges. Most of the country is covered with a heavy growth of small birch and spruce. Some of the spruce is large enough for ties, and a considerable number have been cut along the line. The large bridge timbers are brought from Puget Sound.

When the timber is cleared the ground thaws out to a sufficient depth to enable ordinary construction methods to be used. The work so far has not been of a character to warrant the use of heavy construction equipment, such as steam shovels, but that contemplated for the coming season is of a heavier character as considerable rock will be encountered. While it is impossible to predict at present the length of time it will take to complete the road to Fairbanks, it will probably require three or four years.

#### Westinghouse Memorial Tablet

The Veteran Employees' Association of the Westinghouse Electric & Manufacturing Company, at its third annual banquet, held at Pittsburgh last Saturday evening, presented to the company a bronze memorial tablet, about 4 ft. by 3 ft., bearing a striking bas-relief likeness of the late George Westinghouse,



George Westinghouse

taken from one of his best photographic poses, sitting in an armchair. The tablet is to be put up in the reception room of the company's works at East Pittsburgh, Pa. It was designed by Lorado Taft, of Chicago, and was cast by the James H. Matthews & Company, of Pittsburgh. The tablet bears an inscription describing Westinghouse as "master workman, inventor, founder, organizer."



## REVENUES AND EXPENSES OF RAILWAYS

FIVE MONTHS OF FISCAL YEAR 1916

| NAME OF ROAD.                                 | Average mileage operated during period. | Operating revenues |             |                    | Maintenance of Way and Equip-ment. |             |           | Operating expenses |                  |           | Net Railway operation. | Railway tax accruals. | Operating income (or loss). | Increase (or de-crease) last year. |             |
|-----------------------------------------------|-----------------------------------------|--------------------|-------------|--------------------|------------------------------------|-------------|-----------|--------------------|------------------|-----------|------------------------|-----------------------|-----------------------------|------------------------------------|-------------|
|                                               |                                         | Freight.           | Passenger.  | Total (Inc. misc.) | Structures                         | Equip-ment. | Traffic.  | Trans- portation.  | Miscel- laneous. | General.  |                        |                       |                             |                                    |             |
| Chicago, Burlington & Quincy .....            | 9,366                                   | \$29,572,715       | \$9,784,571 | \$43,332,160       | \$5,103,752                        | \$6,240,442 | \$650,005 | \$12,172,329       | \$352,485        | \$815,022 | \$25,334,035           | \$17,998,125          | \$1,781,000                 | \$16,217,124                       | \$1,527,595 |
| Chicago Great Western.....                    | 1,427                                   | 2,463,833          | 1,407,337   | 6,257,167          | 932,815                            | 1,078,931   | 227,375   | 2,084,990          | 42,068           | 163,307   | 4,323,886              | 1,733,282             | 229,626                     | 1,499,709                          | 61,080      |
| Chicago, Indianapolis & Louisville.....       | 622                                     | 2,145,864          | 807,442     | 3,195,562          | 373,855                            | 321,316     | 36,935    | 1,038,016          | 812              | 39,895    | 2,120,000              | 1,078,502             | 136,210                     | 942,041                            | 288,081     |
| Chicago Junction.....                         | 13                                      | 1,000,000          | 1,000,000   | 2,000,000          | 1,000,000                          | 1,000,000   | 1,000,000 | 2,000,000          | 1,000,000        | 2,000,000 | 2,000,000              | 1,000,000             | 1,000,000                   | 2,000,000                          | 1,000,000   |
| Chicago, Milwaukee & St. Paul .....           | 10,076                                  | 32,140,290         | 8,566,364   | 45,190,596         | 4,509,885                          | 6,621,582   | 789,195   | 15,068,016         | 335,403          | 27,812    | 27,078,122             | 18,112,473            | 2,265,882                   | 223,596                            | 68,654      |
| Chicago, Peoria & St. Louis.....              | 255                                     | 570,253            | 129,629     | 742,927            | 116,452                            | 140,951     | 28,415    | 285,894            | 10,459           | 27,159    | 598,871                | 144,056               | 23,298                      | 120,758                            | 13,880      |
| Chicago, Rock Island & Gulf.....              | 477                                     | 957,540            | 275,631     | 1,314,898          | 218,672                            | 172,399     | 46,563    | 450,599            | 10,459           | 38,668    | 397,268                | 405,600               | 48,365                      | 356,977                            | 44,588      |
| Chicago, Rock Island & Pacific.....           | 7,663                                   | 19,974,812         | 8,276,285   | 30,367,278         | 4,978,122                          | 5,466,898   | 710,596   | 11,010,003         | 249,089          | 789,255   | 13,268,488             | 7,395,725             | 1,428,458                   | 5,965,033                          | 749,466     |
| Chicago, St. Paul, Minn., & Omaha.....        | 1,753                                   | 5,232,963          | 2,330,470   | 8,181,756          | 1,189,760                          | 1,032,119   | 140,345   | 2,781,764          | 79,103           | 189,440   | 4,403,404              | 2,313,353             | 311,599                     | 2,769,718                          | 41,466      |
| Chicago, Terre Haute & Southeastern.....      | 373                                     | 863,938            | 81,163      | 971,904            | 192,060                            | 192,060     | 19,285    | 270,343            | 3,863            | 42,611    | 676,012                | 292,892               | 52,083                      | 240,779                            | 71,571      |
| Cincinnati, Hamilton & Dayton.....            | 1,003                                   | 3,817,525          | 723,114     | 5,067,807          | 823,726                            | 946,388     | 94,495    | 1,780,898          | 18,107           | 104,612   | 3,772,144              | 1,295,663             | 164,809                     | 1,120,674                          | 353,625     |
| Cincinnati, New Orleans & Tex. Pac.....       | 337                                     | 3,207,991          | 693,456     | 4,207,460          | 448,083                            | 1,072,801   | 116,565   | 1,220,340          | 24,016           | 95,055    | 2,976,759              | 1,230,701             | 156,000                     | 1,074,324                          | 288,656     |
| Cincinnati Northern.....                      | 246                                     | 639,418            | 96,590      | 766,015            | 135,985                            | 115,275     | 13,022    | 238,215            | 10,459           | 16,457    | 518,955                | 247,060               | 27,500                      | 219,498                            | 209,883     |
| Cleveland, Cincinnati, Chic. & St. Louis..... | 2,381                                   | 12,147,186         | 3,911,070   | 17,553,877         | 2,059,545                          | 3,211,908   | 366,568   | 5,628,251          | 125,181          | 369,754   | 11,711,541             | 842,336               | 636,000                     | 5,202,934                          | 1,399,334   |
| Colorado Midland.....                         | 338                                     | 556,977            | 107,316     | 716,952            | 125,051                            | 160,939     | 6,602     | 293,619            | 6,974            | 28,665    | 651,870                | 65,082                | 50,000                      | 15,082                             | 89,750      |
| Colorado & Southern.....                      | 1,089                                   | 2,776,858          | 655,200     | 3,678,710          | 501,435                            | 715,239     | 49,790    | 1,004,243          | 22,645           | 116,590   | 2,409,941              | 1,208,769             | 175,000                     | 1,093,633                          | 231,157     |
| Cripple Creek & Colorado Springs.....         | 87                                      | 475,166            | 139,003     | 624,127            | 95,013                             | 64,025      | 22,097    | 132,238            | .....            | 17,128    | 350,501                | 273,626               | 27,877                      | 245,749                            | 55,749      |
| Cumberland Valley.....                        | 164                                     | 1,042,622          | 292,697     | 1,406,111          | 148,513                            | 150,517     | 20,894    | 413,035            | 3,927            | 41,661    | 778,547                | 627,564               | 28,972                      | 598,590                            | 750,973     |
| Delaware & Hudson Co.—R. R. Dept.....         | 886                                     | 8,693,983          | 1,417,133   | 10,712,065         | 871,730                            | 1,554,369   | 137,302   | 3,274,865          | 100,055          | 331,188   | 6,232,331              | 4,459,734             | 282,500                     | 4,175,044                          | 580,520     |
| Delaware, Lackawanna & Western.....           | 959                                     | 14,464,240         | 3,809,483   | 20,184,214         | 2,122,551                          | 2,829,205   | 364,784   | 5,954,481          | 159,227          | 386,223   | 11,784,368             | 8,399,546             | 809,800                     | 7,499,424                          | 1,121,217   |
| Denver & Rio Grande.....                      | 2,577                                   | 7,951,236          | 2,679,977   | 11,503,444         | 1,431,834                          | 1,809,848   | 201,161   | 2,922,401          | 255,954          | 240,410   | 6,861,610              | 4,411,834             | 450,000                     | 4,191,258                          | 1,050,805   |
| Denver & Salt Lake.....                       | 255                                     | 698,095            | 174,419     | 912,137            | 100,153                            | 144,344     | 10,877    | 289,750            | .....            | 23,710    | 568,723                | 343,413               | 39,445                      | 303,806                            | 42,836      |
| Detroit & Mackinac.....                       | 393                                     | 304,352            | 481,500     | 54,868             | 77,795                             | 38,053      | 10,120    | 162,459            | 892              | 13,506    | 283,610                | 161,997               | 36,282                      | 125,714                            | 23,001      |
| Detroit & Toledo Shore Line.....              | 81                                      | 606,374            | 140,952     | 610,179            | 65,252                             | 38,053      | 7,653     | 159,145            | .....            | 13,506    | 283,610                | 161,997               | 36,282                      | 125,714                            | 23,001      |
| Detroit, Grand Haven & Milwaukee.....         | 191                                     | 909,000            | 288,900     | 1,377,111          | 110,581                            | 126,381     | 27,496    | 563,140            | 3,684            | 20,915    | 872,197                | 501,914               | 18,850                      | 485,647                            | 325,006     |
| Detroit, Toledo & Ironton.....                | 441                                     | 770,878            | 76,001      | 904,682            | 97,809                             | 123,443     | 19,217    | 350,036            | .....            | 30,164    | 620,669                | 284,013               | 27,500                      | 256,479                            | 159,825     |
| Duluth & Iron Range.....                      | 273                                     | 3,578,866          | 95,819      | 3,773,685          | 303,874                            | 392,257     | 5,375     | 777,270            | 3,980            | 45,490    | 1,324,245              | 2,045,261             | 204,261                     | 2,045,261                          | 2,045,261   |
| Duluth, Missabe & Northern.....               | 400                                     | 6,003,093          | 133,775     | 6,136,868          | 496,839                            | 603,177     | 10,236    | 930,908            | 43,038           | 49,770    | 2,133,969              | 4,577,970             | 377,971                     | 4,200,000                          | 2,577,971   |
| Duluth, South Shore & Atlantic.....           | 628                                     | 938,860            | 408,262     | 1,492,118          | 269,658                            | 170,434     | 36,275    | 484,964            | 19,362           | 45,184    | 1,017,077              | 475,041               | 85,000                      | 389,993                            | 225,375     |
| Duluth, Winnipeg & Pacific.....               | 187                                     | 449,712            | 89,173      | 569,129            | 67,144                             | 63,578      | 7,911     | 182,981            | 3,347            | 28,159    | 555,120                | 377,971               | 27,969                      | 179,641                            | 132,190     |
| El Paso & Southwestern Co.....                | 1,027                                   | 3,234,870          | 645,329     | 4,131,715          | 656,135                            | 539,368     | 89,558    | 1,023,169          | 32,782           | 138,072   | 2,491,257              | 1,637,435             | 189,097                     | 1,448,358                          | 379,283     |
| Elgin, Joliet & Eastern.....                  | 1,988                                   | 4,839,970          | 65,819      | 5,154,982          | 397,936                            | 809,604     | 31,008    | 1,291,940          | 109,682          | 532,001   | 2,632,147              | 2,522,835             | 180,375                     | 2,342,460                          | 1,008,166   |
| Elgin, Joliet & Eastern.....                  | 745                                     | 1,170,480          | 482,662     | 1,907,476          | 358,949                            | 292,568     | 39,351    | 735,959            | 14,769           | 94,991    | 1,501,814              | 405,662               | 109,521                     | 295,962                            | 181,542     |
| Florida East Coast.....                       | 1,938                                   | 4,935,534          | 1,430,172   | 6,225,238          | 988,261                            | 988,261     | 144,747   | 3,020,713          | .....            | 172,814   | 5,787,346              | 937,891               | 303,713                     | 626,954                            | 1,616,923   |
| Fort Worth & Denver City.....                 | 454                                     | 1,673,429          | 715,581     | 2,514,108          | 309,235                            | 409,607     | 33,202    | 717,603            | .....            | 76,212    | 1,560,563              | 953,545               | 88,390                      | 864,915                            | 132,381     |
| Galveston, Harrisburgh & San Antonio.....     | 1,351                                   | 3,728,810          | 1,370,038   | 5,367,695          | 692,425                            | 690,237     | 148,847   | 1,882,005          | 54,077           | 161,102   | 3,622,975              | 1,744,720             | 241,393                     | 1,502,198                          | 612,289     |
| Georgia, Southern & Florida.....              | 13                                      | 868,552            | 1,320,436   | 2,848,987          | 28,848                             | 11,188      | 1,987     | 136,244            | 12,996           | 37,399    | 908,075                | 381,551               | 114,476                     | 266,698                            | 67,500      |
| Grand Rapids & Indiana.....                   | 307                                     | 586,499            | 276,266     | 982,091            | 112,845                            | 203,165     | 63,433    | 490,811            | 490              | 49,372    | 727,884                | 251,207               | 52,170                      | 201,375                            | 86,804      |
| Grand Rapids & Indiana.....                   | 575                                     | 1,386,533          | 791,030     | 2,381,866          | 275,719                            | 339,421     | 53,929    | 895,971            | 12,996           | 49,372    | 1,650,544              | 731,322               | 108,274                     | 622,666                            | 26,940      |
| Grand Trunk Western.....                      | 347                                     | 2,600,200          | 762,000     | 3,600,344          | 3,600,344                          | 3,600,344   | 3,600,344 | 3,600,344          | 3,600,344        | 3,600,344 | 3,600,344              | 3,600,344             | 3,600,344                   | 3,600,344                          | 3,600,344   |
| Great Northern.....                           | 8,102                                   | 28,134,004         | 6,519,797   | 37,914,004         | 3,128,517                          | 3,128,517   | 3,128,517 | 3,128,517          | 3,128,517        | 3,128,517 | 3,128,517              | 3,128,517             | 3,128,517                   | 3,128,517                          | 3,128,517   |
| Great Northern.....                           | 308                                     | 883,993            | 145,626     | 804,305            | 77,415                             | 131,124     | 13,092    | 186,325            | 1,341            | 33,042    | 442,338                | 361,966               | 36,713                      | 324,817                            | 129,005     |
| Gulf, Colorado & Santa Fe.....                | 1,938                                   | 4,935,534          | 1,430,172   | 6,225,238          | 988,261                            | 988,261     | 144,747   | 3,020,713          | .....            | 172,814   | 5,787,346              | 937,891               | 303,713                     | 626,954                            | 1,616,923   |
| Hocking Valley.....                           | 351                                     | 2,604,918          | 383,076     | 3,240,595          | 318,021                            | 565,739     | 41,067    | 878,060            | .....            | 72,160    | 1,875,047              | 1,365,548             | 187,000                     | 1,178,541                          | 285,500     |
| Houston, East & West Texas.....               | 191                                     | 422,091            | 140,467     | 601,145            | 130,603                            | 95,091      | 10,014    | 195,348            | 3,313            | 15,694    | 449,775                | 151,370               | 23,546                      | 127,732                            | 42,875      |
| Houston & Texas Central.....                  | 895                                     | 2,133,074          | 667,173     | 3,010,120          | 403,626                            | 459,569     | 76,971    | 951,636            | 29,222           | 94,276    | 2,012,730              | 997,390               | 146,853                     | 849,564                            | 256,755     |
| Illinois Central.....                         | 4,767                                   | 20,318,011         | 5,733,171   | 28,239,538         | 484,207                            | 678,808     | 512,419   | 8,824,137          | 147,784          | 727,119   | 21,442,067             | 6,797,471             | 1,364,500                   | 5,424,485                          | 307,356     |
| Indiana Harbor Belt.....                      | 1,159                                   | 2,518,785          | 780,984     | 3,924,811          | 188,316                            | 135,707     | 13,632    | 365,921            | .....            | 38,465    | 442,041                | 573,271               | 37,849                      | 534,334                            | 107,194     |
| International & Great Northern.....           | 1,159                                   | 2,518,785          | 780,984     | 3,924,811          | 188,316                            | 135,707     | 13,632    | 365,921            | .....            | 38,465    | 442,041                | 573,271               | 37,849                      | 534,334                            | 107,194     |
| Kanawha & Michigan.....                       | 177                                     | 1,316,985          | 161,441     | 1,516,666          | 208,637                            | 297,845     | 7,490     | 380,993            | 93               | 34,462    | 936,21                 |                       |                             |                                    |             |

## RAILWAY AGE GAZETTE

216

| REVENUES AND EXPENSES OF RAILWAYS          |                                         |                    |             |              |                      |                     |           |                                 |                                             |
|--------------------------------------------|-----------------------------------------|--------------------|-------------|--------------|----------------------|---------------------|-----------|---------------------------------|---------------------------------------------|
| FIVE MONTHS OF FISCAL YEAR 1916.           |                                         |                    |             |              |                      |                     |           |                                 |                                             |
| NAME OF ROAD.                              | Average mileage operated during period. | Operating revenues |             |              | Operating expenses   |                     |           | Net operating income (or loss). | Increase (or decrease) in income last year. |
|                                            |                                         | Freight.           | Passenger.  | Total.       | Trans-<br>portation. | Miscel-<br>laneous. | General.  |                                 |                                             |
| Missouri Pacific.....                      | 1,231                                   | \$9,776,857        | \$2,345,006 | \$12,121,863 | \$319,129            | \$4,546,522         | \$343,016 | \$10,286,117                    | \$3,191,977                                 |
| Mobile & Ohio.....                         | 196                                     | 4,089,737          | 522,066     | 4,611,803    | 170,304              | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Monongahela.....                           | 204                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Nashville, Chattanooga & St. Louis.....    | 402                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Nevada Northern.....                       | 285                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| New Orleans & North Eastern.....           | 285                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| New Orleans, Mobile & Chicago.....         | 5,969                                   | 50,978,895         | 21,135,807  | 72,114,702   | 13,693,317           | 23,251,515          | 1,782,332 | 32,849,772                      | 3,734,793                                   |
| New Orleans, Texas & Mexico.....           | 569                                     | 4,742,690          | 655,921     | 5,398,611    | 13,693,317           | 23,251,515          | 1,782,332 | 32,849,772                      | 3,734,793                                   |
| New York Central Railroad.....             | 568                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| New York, Chicago & St. Louis.....         | 140                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| New York, New Haven & Hartford.....        | 2,049                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| New York, Ontario & Western.....           | 908                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| New York, Philadelphia & Norfolk.....      | 6,510                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| New York, Susquehanna & Western.....       | 607                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Norfolk & Western.....                     | 2,257                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Norfolk Pacific.....                       | 2,027                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Northwestern Pacific.....                  | 1,757                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Oregon Short Line.....                     | 4,528                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Oregon-Washington Fe.....                  | 2,258                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Panhandle & Santa Fe.....                  | 1,720                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Pennsylvania Company.....                  | 1,177                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Pennsylvania Railroad.....                 | 225                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Pennsylvania Railroad.....                 | 1,479                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Philadelphia & Reading.....                | 204                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Philadelphia, Baltimore & Annapolis.....   | 468                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Pittsburgh & Lake Erie.....                | 244                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Pittsburgh, Cincinnati & St. L.....        | 811                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Pittsburgh, Shawmut & Potomac.....         | 258                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Port Reading.....                          | 4,750                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Richmond, Fredericksburg & Potomac.....    | 548                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Rutland.....                               | 3,363                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Joseph & Grand Island.....             | 9                                       | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Louis & San Francisco.....             | 244                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Louis, Brownsville & Mexico.....       | 943                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Louis, Iron Mountain & Southern.....   | 811                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Louis, Merchant's Bridge Terminal..... | 724                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Louis, San Francisco & Texas.....      | 1,147                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Louis, Southwestern of Texas.....      | 1,147                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Louis, Southwestern of Texas.....      | 3,123                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| St. Louis, Southwestern of Texas.....      | 7,022                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| San Antonio & Aransas Pass.....            | 6,929                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| San Antonio & Aransas Pass.....            | 555                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| San Pedro, Los Angeles & Salt Lake.....    | 11                                      | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Seaboard.....                              | 294                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Southern Pacific & Seattle Co.....         | 37                                      | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Spokane, Portland & Seattle.....           | 468                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Staten Island Rapid Transit Co.....        | 436                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Tennessee Central.....                     | 1,944                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Terminal R. R. Ass'n of St. Louis.....     | 450                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Texas & New Orleans.....                   | 450                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Toledo & Ohio Central.....                 | 128                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Texas & Pacific.....                       | 3,618                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Toledo, Peoria & Western.....              | 9                                       | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Toledo, St. Louis & Western.....           | 31                                      | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Union Pacific.....                         | 910                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Union R. R. of Baltimore.....              | 171                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Union R. R. of Pennsylvania.....           | 504                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Vandalia.....                              | 240                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Vicksburg.....                             | 2,519                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Virginian.....                             | 941                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Virginia & Southern.....                   | 358                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Washington, Southern.....                  | 664                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Washington Pacific.....                    | 133                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| West Jersey & Seashore.....                | 512                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Western Maryland.....                      | 1,382                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Western Ry. of Alabama.....                | 133                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Wheeling & Lake Erie.....                  | 133                                     | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |
| Yazoo & Mississippi Valley.....            | 1,382                                   | 1,122              | 1,230,462   | 1,231,692    | 1,088,871            | 1,686,736           | 155,180   | 3,636,591                       | 1,201,916                                   |



### Investigation of the Interborough Rapid Transit Company

The New York State Legislative Committee, known as the Thompson Committee, which a few weeks ago inquired into the relations between a number of signal manufacturers and Robert C. Wood, one of the Public Service commissioners of the state, has this week taken up the question of the management of the Interborough Rapid Transit Company, and has questioned Frank Hedley, general manager of that company, concerning his alleged wrongful appropriation of inventions made by employees of the company. Mr. Hedley and J. S. Doyle, superintendent of the car department, have invented a number of improvements in operation; and Mr. Hedley, on the witness stand, told of his numerous patents, and of his income. The witness indignantly denied the insinuations of the counsel for the investigators and said that every employee of the Interborough received a square deal. His name had never been attached to an application for a patent unless he had been a part inventor. The Interborough, he said, in 1903 had paid him \$5,000 for a device for scraping ice from the third rail of the elevated line. He had perfected a recording device, used on the company's motor cars, which saves \$600,000 a year. This device, called a coasting clock, shows what parts of a run are made with power off; and prizes are given to the motormen who coast the largest proportion of their mileage. The perfection of this device took 12 years, and Mr. Hedley receives \$7.50 a year for each one in use. For the invention of the corrugated ends for car platforms, designed to keep platforms from rising one above the other, in case of collision, the Interborough paid Mr. Hedley \$10 per car. These platforms are used on 40 other railways.

Hedley's and Doyle's experiments are carried out, under their direction, by employees in the company's shops. As a rule the employee who invents a useful device may get it patented and put it on the market; but the Interborough is to have the use of it for nothing. The only important invention which witness recalled, except those of himself and Doyle, was that of the speed control block signals used in the subway at the approaches to stations, allowing trains to run with safety very close together. This was patented by James M. Waldron, signal engineer. The Interborough paid him \$1,500. Waldron's salary is about \$4,000. H. D. Scott, chief of the power house, who has a large salary, invented important electrical devices from which, however, he did not get much money.

The witness told of investments by himself with companies which sell devices or supplies to the railroad company. He had lately disposed of some stock of this kind and the investigators asked questions designed to bring out that he did this because he feared an investigation; but nothing of importance was developed.

Mr. Hedley's salary as general manager of the Interborough is \$32,000 a year; from the New York Railways, operating surface lines, he receives \$12,000, and as vice-president of the Subway Construction Company \$6,000. He told the committee that his total income was \$85,000 a year. The new design of surface street cars, with the floor at a low level, making steps unnecessary, was the subject of considerable inquiry. Hedley and Doyle claim to be the inventors of the car, but there is a rival by the name of Jones, of Pittsburgh.

### Signaling Progress on the Great Western Railway

The signal department of the Great Western Railway of England has in service 45,389 working levers, an increase during 1915 of 912. During that year over 700 torpedo placing machines were installed. Plans have been prepared to introduce track-circuit safeguards throughout the interlockings at Reading, Westbury, Oxford, Didcot, Gloucester and other large stations. In connection with track circuits and other electric apparatus in the signal department there were charged during 1915 no less than 38,000 cells of storage battery, which is nearly 50 per cent larger than the total charged in 1914.

### June Mechanical Convention

During the past week 13,000 more square feet of exhibit space at Atlantic City has been applied for, bringing the total up to 43,879 sq. ft. Over 20 per cent of the applications received this week were from companies which did not exhibit last year. Over 15 per cent of the total of all the applications to date are from companies which did not exhibit last year. This is more than half of the total space available and repre-

sents the application of 121 exhibitors. Application for space should be made to the Railway Supply Manufacturers' Association, room 3136, Oliver building, Pittsburgh, Pa. The meeting of the exhibit committee is to take place on February 18, 1916. All applications for space should be made before this meeting. Exhibitors who have occupied the same space in years past will be given this space this year if their application is in before February 18 meeting, but if their application is not in before this meeting, and others have applied for this space the space will be allotted to the new applicants. The exhibit committee has extended an invitation to the exhibitors to be presented at the meeting of the committee on February 18. This meeting of the executive committee of the Railway Supply Manufacturers' Association will take place at room 3136, Oliver building, Pittsburgh.

### MEETINGS AND CONVENTIONS

*The following list gives names of secretaries, date of next or regular meetings and places of meeting.*

- AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass. Next convention, May 2-5, 1916, Atlanta, Ga.
- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, 455 Grand Central Station, Chicago.
- AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D. L. & W., Hoboken, N. J.
- AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, East St. Louis, Ill. Next meeting, June 20-23, 1916, Cincinnati, O.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Herman, Room 101, Union Station, St. Louis, Mo.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burns, 8 W. 40th St., New York. Mid-year meeting, February 4, 1916, Congress Hotel, Chicago.
- AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—H. G. McConaughy, 165 Broadway, New York.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPEFITTERS' ASSOCIATION.—W. E. Jones, C. & N. W., 3814 Fulton St., Chicago.
- AMERICAN RAILWAY ASSOCIATION.—J. F. Fairbanks, general secretary, 75 Church St., New York.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 17-19, 1916, New Orleans, La.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next convention March 21-23, 1916, Chicago.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Building, Chicago. Annual meeting, June 19, 1916, Atlantic City, N. J.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—Owen D. Kinsey, Illinois Central, Chicago. Annual meeting, July, 1916.
- AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, Supt. Timber Preservation, B. & O., Mt. Royal Sta., Baltimore, Md. Next convention, January 23-25, 1917, New York.
- ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—E. R. Woodson, Rooms 1116-8, Woodward Bldg., Washington, D. C. Annual meeting, June 28, 1916, Hotel Statler, Detroit, Mich.
- ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago. Semi-annual meeting with Master Car Builders' Association. Annual convention, October, 1916, Chicago.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.—Willis H. Failing, N. Y. C., 3842 Grand Central Terminal, New York. Next meeting, May 19, 1916, Atlantic City, N. J.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, Soo Line, 112 West Adams St., Chicago. Annual meeting, June 20-22, 1916, St. Paul, Minn.
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 75 Church St., New York.
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—P. C. Jacobs, H. W. Johns-Manville Co., Chicago. Meetings with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual meeting, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.
- FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Traffic Manager, R. F. & P., Richmond, Va. Annual session, May 17, 1916, Washington, D. C.
- GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month. Room 1856, Transportation Bldg., Chicago.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.—C. G. Hall, C. & E. I., 922 McCormick Bldg., Chicago. Annual meeting, August 29, 30, 31 and September 1, 1916, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1126 W. Broadway, Winona, Minn. Annual meeting, July, 1916.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, C. H. & D., Lima, Ohio. Next meeting, August, 1916, Chicago.

MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—T. I. Goodwin, C. R. I. & P., Eldon, Mo.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York. Annual convention, May 23-26, 1916, Hollenden Hotel, Cleveland, Ohio.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September 12-14, 1916, Wilmington, Del.

MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Building, Chicago. Annual meeting, June 14, 1916, Atlantic City, N. J.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. W. Kelly, 349 People's Gas Bldg., Chicago. Next convention, March 21-23, 1916, Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—E. N. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.

RAILROAD MEN'S IMPROVEMENT SOCIETY.—J. B. Curran, Erie R. R., 50 Church St., New York. Meetings, alternate Thursdays, October to May, Assembly Rooms of Merchants' Association, Woolworth Bldg., New York.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 30 Church St., New York. Annual meeting, December, 1916, New York.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Monongahela House, Pittsburgh.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, 1063 Monadnock Block, Chicago. Meetings with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—C. B. Edwards, Fire Ins. Agt., Mobile & Ohio, Mobile, Ala., October 3-5, 1916, New York.

RAILWAY REAL ESTATE ASSOCIATION.—Frank C. Irvine, 1125 Pennsylvania Station, Pittsburgh, Pa. Annual meeting, October 10, 1916, Chicago.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Myers Bldg., Bethlehem, Pa. Next annual convention, September, 1916, Grand Hotel, Mackinac Island, Mich.

RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, N. Y. C. R. R., Box C, Collingwood, Ohio. Annual meeting, May, 1916.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa. Meetings with Master Car Builders' and Master Mechanics' Associations.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 50 Church St., New York. Meetings with Association of Railway Telegraph Superintendents.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—L. C. Ryan, C. & N. W., Sterling, Ill. Next annual convention, September 19-22, 1916, New York.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

SALT LAKE TRANSPORTATION CLUB.—R. E. Rowland, David Keith Bldg., Salt Lake City, Utah. Regular meetings, 1st Saturday of each month, Salt Lake City.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—Carl Nyquist, C. R. I. & P., 1134 La Salle St. Sta., Chicago.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. R. R., Atlanta, Ga. Next meeting, April, 1916.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 A. M., Piedmont Hotel, Atlanta.

TOLEDO TRANSPORTATION CLUB.—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEWARK.—Roy S. Bushy, Firemen's Bldg., Newark, N. J. Regular meetings, 1st Monday in month, except July and August, The Washington, 559 Broad St., Newark.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.

TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Gen'l Agt., Erie R. R., 1924 Oliver Bldg., Pittsburgh, Pa. Meetings, bi-monthly, Pittsburgh.

TRAFFIC CLUB OF ST. LOUIS.—A. F. Versen, Mercantile Library Bldg., St. Louis, Mo. Annual meeting in November. Noonday meetings, October to May.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7122 Stewart Ave., Chicago. Next convention, June 21, 1916, Toronto, Ont.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. R. R., East Buffalo, N. Y. Next meeting, September, 1916, Chicago.

UTAH SOCIETY OF ENGINEERS.—Frank W. Moore, 1111 Newhouse Bldg., Salt Lake City, Utah. Regular meetings, 3d Friday in month, except July and August, Salt Lake City.

WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Building, Chicago. Regular meetings, 3d Tuesday in month, except June, July and August, Grand Pacific Hotel, Chicago.

WESTERN SOCIETY OF ENGINEERS.—E. N. Layfield, 1735 Monadnock Block, Chicago. Regular meetings, 1st Monday in month, except January, July and August, Chicago. Extra meetings, except in July and August, generally on other Monday evenings. Annual meeting, 1st Wednesday after 1st Thursday in January, Chicago.

## Traffic News

In view of the efforts which the government and various organizations are making to create a more general interest in the national parks, the department of tours of the Chicago & North Western and the Union Pacific has announced that its summer tours for 1916 will include two circuit tours, visiting seven of the principal national parks, beginning in June and in August.

For the convenience and accommodation of exhibitors at the Chicago Automobile Show, which closed on Saturday night, January 29, the Adams Express Company and the Chicago, Burlington & Quincy Railroad ran a special train leaving Chicago Saturday night to transport the exhibitors, their representatives and exhibits to Minneapolis in time for the installation of the exhibits before the opening of the Minneapolis show on Monday, January 31. The train consisted of sleeping cars and special automobile cars for the accommodation of automobiles, their accessories and attendants.

The Pennsylvania Railroad announced on January 28 that it had been forced again to refuse freight for New England and for delivery by lighter in New York harbor, both domestic and export. There has been an increase in congestion, due in large measure to dense fog in New York harbor; and on the date of the notice the Pennsylvania had approximately 25,000 cars on its lines destined to points east of Trenton. The only exceptions to the present embargo are livestock, perishable freight, food-stuffs for human consumption, freight for the United States government and fuel for use by railroads.

The Missouri railroads have announced their intention of filing under protest a freight tariff including the slight increases in rates prescribed by the Public Service Commission in the Missouri general rate advance case, effective on March 1. The passenger tariff, providing for the rates fixed by the commission, 2½ cents a mile for one-way tickets, 2¼ cents a mile for round-trip tickets, and interchangeable and transferable mileage books at 2 cents a mile will be filed under protest by the Wabash, the Chicago, Rock Island & Pacific, the Chicago, Burlington & Quincy, the Chicago & Alton and the Missouri, Kansas & Texas, but will not be filed by the St. Louis & San Francisco, the Atchison, Topeka & Santa Fe, the Missouri Pacific, the St. Louis Southwestern or the Kansas City Southern.

### Western Demurrage and Storage Bureau

The western railroads have organized the Western Demurrage and Storage Bureau, which will begin operation on or before March 1, with headquarters at 1872 Transportation building, Chicago. M. W. Rotchford, formerly manager of the Illinois and Iowa Demurrage Bureau at Peoria, Ill., has been appointed manager. The object of the bureau is to insure the administration of the demurrage and storage rules, with the instructions, explanations and interpretations applying to them, on a uniform basis. A joint demurrage and storage tariff will be published by the bureau to take the place of tariffs published by the individual lines, thus making the demurrage and storage rules of all the lines uniform and readily accessible to shippers in a convenient form. The manager will investigate complaints received from member lines or from the shipping public as to differences arising from the administration of the demurrage and storage tariff, and will endeavor to maintain friendly relations between the railroads and the shipping public on demurrage and storage questions. The territory in which the bureau will operate embraces the following states: Arkansas, Colorado, Idaho, Illinois, Iowa, Kansas, Louisiana, Michigan, Missouri, Minnesota, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, Wisconsin and Wyoming.

THE COAL PRODUCTION OF SPAIN.—The output of coal, in Spain, in 1913 was 3,783,214 tons and the coke production was 595,677 tons.



## Commission and Court News

### INTERSTATE COMMERCE COMMISSION

Seven San Francisco companies have filed a complaint with the Interstate Commerce Commission against the Southern Pacific and the Western Pacific, charging discrimination in the rates on live stock from Nevada, Utah, Oregon and Mexico to San Francisco, as compared with the rates to Oakland, Cal.

#### Coal to Rhode Island Points

*Opinion by Commissioner Clark:*

The carriers have justified a proposed increase from \$2.45 to \$2.70 per gross ton in all rail rate from bituminous coal in carloads from the Clearfield district of Pennsylvania to Providence, Auburn and Olneyville, R. I. (37 I. C. C., 650.)

#### Complaints Dismissed

*Omaha Grain Exchange v. Mobile & Ohio et al. Opinion by Commissioner Harlan:*

Rates on blackstrap molasses from Mobile, New Orleans, and other points in Louisiana to Omaha are held not to be unreasonable. (37 I. C. C., 363.)

*W. P. Brown & Sons Lumber Company et al v. Louisville & Nashville. Opinion by the commission:*

Defendant's rates on hardwood lumber and logs in carloads from points in Alabama, Tennessee and Kentucky to Louisville, Ky., Evansville, Ind., and Cincinnati, Ohio, are not found unreasonable. (37 I. C. C., 507.)

#### Rates on Bottles to Kentucky Points

*I. T. Axton v. Kanawha & Michigan et al. Opinion by the commission:*

The rates charged by the defendants on glass bottles in carloads from Dunbar, W. Va., to Midway and Frankfort, Ky., are found unreasonable and discriminatory, and rates to Mount Sterling and Lexington, Ky., are found discriminatory, to the extent that they exceeded the rates on like traffic to Louisville. Authority to charge rates on glass bottles in carloads from Dunbar, W. Va., to Mount Sterling, Lexington, Midway, and Frankfort, Ky., higher than those on similar traffic to Louisville, Ky., is denied. (37 I. C. C., 389.)

#### Division of Joint Rates on Fuel Coal

*In the matter of filing with the Interstate Commerce Commission divisions of joint rates applicable to railway fuel coal. Opinion by Commissioner Meyer:*

The commission in this case reviews its rulings relative to rates and divisions of rates on fuel coal and states that in its opinion it is desirable that all carriers subject to its jurisdiction be required to file their divisions of joint rates on railway fuel coal, in the transportation of which they participate, and that they be required further, when changes are made in such divisions, to file a statement of facts relied upon as justification for such changes. An order is issued to that effect. (37 I. C. C., 265.)

#### Rates on Coal from Besco, Pa.

*Pitt Gas Coal Company v. Pennsylvania Railroad et al. Opinion by Commissioner Meyer:*

The present rate on coal from Besco, Pa., a station on a branch of the Monongahela division of the Pennsylvania, to Ashtabula Harbor, Ohio, and other lake ports in the state of Ohio, when for transshipment by vessels on the Great Lakes to points beyond, is found to be unreasonable to the extent that it exceeds the lake cargo rate from the Pittsburgh district of 78 cents per ton. In *Clyde Coal Company v. P. R. R.*, 23 I. C. C., 135, the commission ordered the extension of the Pittsburgh district to include the Clyde mine, located within 2.4 miles of complainant's mine. The southern boundary of the Pittsburgh district is now changed to include Besco. (37 I. C. C., 240.)

### Joint Rates Between Rail and Water Lines

*Black & White River Transportation Company v. Missouri Pacific et al. Opinion by Commissioner Clements:*

Increased through charges resulting from the cancellation by the defendant rail carriers in May, 1912, of joint rates in connection with the complainant on lumber and other forest products taking the same rates from landings on the Black and White rivers, in Arkansas, to interstate destinations on the defendants' lines, are found not justified, and the reestablishment of joint rates is required. The transportation company owns one steamboat and two barges, which it operates from Newport, Ark., as far north on the Black River as Black Rock, Ark., about 110 miles, and as far south on the White River as Augusta, Ark., more than 60 miles. It delivers freight to the Iron Mountain at Newport; to the Rock Island at Jacksonport, Ark.; and to the Frisco at Black Rock. (37 I. C. C., 244.)

### Official Classification Ratings on Nested Goods

*Opinion by Commissioner Harlan:*

The commission finds that the following Rule 34 of Official Classification No. 41 with the words "unless otherwise specified" prefixed to it will be a reasonable one.

SECTION 1. The term "nested," used in package specifications in this classification, means that two or more different sizes of the article for which the "nested" specification is provided must be inclosed each smaller within each next larger, or that two or more of the article for which the "nested" specification is provided must be placed one within the other so that each upper article will not project above the next lower article more than one-third of its height.

SEC. 2. The provisions shown in section 1 of this rule prohibit the application of "nested" ratings when articles of different name or material, whether grouped in one description or shown separately, are nested or inclosed one within the other. (37 I. C. C. 477.)

### Packing House Products and Fresh Meats from Houston, Tex.

*Houston Packing Company v. Houston East & West Texas et al. Opinion by the commission:*

On a complaint that the rates on packing house products and fresh meats from Houston, Tex., are higher than from Fort Worth, Tex., the commission finds:

That the present rates from Houston to Salt Lake City, Utah, Kansas City, Mo., Omaha, Neb., Chicago, and Milwaukee, Wis., are discriminatory to the extent that they exceed rates on certain differentials over the rates from Fort Worth; that the present rates from Houston to Little Rock, Ark., on fresh meats, and to Oklahoma City, Okla., on packing-house products, are discriminatory to the extent that they exceed the mileage scale basis of rates approved in *Investigation of Alleged Unreasonable Rates on Meats*, 22 I. C. C., 160, 23 I. C. C., 656 applied from Fort Worth, but that the present relationship, as between Houston and Fort Worth, on packing-house products to Denver, Colo., Little Rock, Hope, Fort Smith, and Marianna, Ark., and on fresh meats to Denver and Marianna is not discriminatory. (36 I. C. C., 672.)

### Safety Appliances on Railroads in Porto Rico

*Opinion by Commissioner Hall:*

Following the decision of the United States Supreme Court in *American Railroad of Porto Rico v. Didricksen*, 227 U. S., 145, holding that the safety appliance acts applied to Porto Rico, the commission started an investigation of conditions in that territory. There are in Porto Rico about 335 miles of railway, all of which is less than standard gage, owned by nine companies. Of these carriers only three carry any appreciable amount of general traffic; the others are primarily plant or industrial facilities of the sugar companies of the island used for carrying cane. In order to obtain permission to cross public roads or streams, and to exercise the right of eminent domain, however, the owners of these industrial roads have assumed the duties of common carriers. Most of the cars used to carry sugar are four-wheel cars of small capacity.

The commission believes that trains composed of cars exclusively used for the transportation of sugar cane on common carrier railroads in Porto Rico should be excepted from the provisions of the safety appliance acts relating to power brakes. The present acts neither make such exception, nor confer upon the commission the power to make it, so pending action by congress, the commission is constrained to hold that the cars, as

well as the locomotives of the carriers of Porto Rico must be made to conform with the requirements of the safety appliance acts on or before January 1, 1917. (37 I. C. C., 470.)

#### Joint Rates With the East Jersey Railroad & Terminal Company

*East Jersey Railroad & Terminal Company v. Central Railroad of New Jersey et al. Opinion by Commissioner Hall:*

In its original report in this proceeding, *East Jersey R. R. & T. Co. v. C. R. R. Co. of N. J.*, 36 I. C. C., 146, the commission found that the terminal company, and the Southern Cotton Oil Company, had made out a prima facie case of discrimination against the former and shippers on its line through the withdrawal in April, 1914, by defendants, of joint rates in connection with the terminal company from various points in New York including points in New York Harbor within the established lighterage limits, which had been in effect for some years. Upon a consideration of evidence regarding changes in rates to New York, following *The Five Per Cent Case*, conclusions in the original report are modified and it is now held that joint rates should be established in connection with the terminal company to New York, including points in New York harbor within the established lighterage limits and delivery on board vessels in New York Harbor for export not in excess of those maintained by defendants to New York over other routes. (37 I. C. C., 357.)

#### Official Classification Ratings

*Opinion by Commissioner Harlan:*

Upon a consideration of objections to proposed changes in classification ratings on certain commodities named in supplement No. 9 to official classification No. 42, and certain other tariffs, and of the facts shown of record in relation thereto, the commission holds that:

Proposed higher ratings on beer, beer tonic, ale and porter in carloads and less than carloads; on nonalcoholic beverages in carloads and less than carloads; on tobacco cuttings or scraps and tobacco siftings or sweepings in less than carloads; on plug or twist tobacco in carloads and less than carloads; on grain and grain products in less than carloads; on animal, poultry, and pigeon feed, not medicated, in less than carloads; and on rags, waste paper, and other paper makers' fibers in less than carloads, are not justified; that

Proposed higher ratings on beer barrels and certain other cooperage, both new and old, in carloads and less than carloads; and on old bottles in carloads and less than carloads and old bottle carriers in carloads are justified; that the

Proposed establishment of carload and less-than-carload ratings on leaf tobacco in lieu of any quantity rating is not justified, and that

Proposed increased estimated weights of flour in barrels and half barrels are justified. (37 I. C. C., 116.)

#### Export Grain Case

*Opinion by Commissioner Hall:*

The commission finds that the carriers have not justified proposed increased carload rates on grain, grain products and by-products to Atlantic Coast ports for export from central freight association territory, points on the west bank of the Mississippi river in Iowa and Missouri, certain points in Kentucky immediately south of the Ohio, and points in Wisconsin taking Chicago rates to the East. The carriers contended that economic conditions no longer require any difference between export and domestic rates on grain to Atlantic ports, and that their export rates could not be unreasonable if they did not exceed the corresponding rates on domestic traffic. The commission was influenced in this decision, however, by the fact that on the average export shipments load heavier than domestic shipments; it declares that grain shippers in the territory involved are entitled to reasonable rates by the direct lines, and unless the present rates by the latter are unreasonably low they cannot be increased merely to accord more revenue to the more circuitous routes. A dissenting opinion by Commissioner Harlan, in which Commissioners Clark and Daniels concur, holds that the record in this case and the absence of some more definite showing of justifying differences in the condition of transportation than the heavier loading of the export traffic mentioned, is not sufficient argument in favor of lower export rates. In so far as the heavier loading

alone is concerned, the longer free time allowed at the port on export shipments fully offsets the heavier loading (37 I. C. C., 190.)

#### Southern Pacific's Ownership of Oil Steamers

*Opinion by Commissioner Clark:*

In the commission's original report in this case, *Southern Pacific Company Ownership of Oil Steamers*, 34 I. C. C., 77, the commission considered, and denied in part, the application of the carrier and the Associated Oil Company to continue to operate beyond July 1, 1914, a fleet of oil steamers. Upon a rehearing, and in the light of new and additional facts, brought up on the rehearing, the commission now holds that as long as their respective operations remain as at present the Southern Pacific Company does not and may not compete with the steamers of the Associated Oil Company, and that their continued ownership and operation by the Southern Pacific Company through the Associated Oil Company is not a violation of Section 5 of the act to regulate commerce as amended by the Panama Canal act. The Associated Oil Company operates a fleet of steamers principally engaged in carrying the Oil Company's oil from certain loading ports in California to points on San Francisco Bay, to points in the Pacific northwest, to Honolulu, Hawaii, and to Alaska. In the previous case the commission denied the carrier's petition in so far as it concerned the continuance of the service from the loading ports in California to points in Oregon and Washington. (37 I. C. C., 528.)

#### Applications Under the Panama Canal Act

*The Ocean Steamship Company of Savannah. Opinion by Commissioner Meyer:*

Upon an application of the Central of Georgia, to which the Illinois Central was made a party in interest by order of the commission, the carrier is allowed to retain its interest in the Ocean Steamship Company of Savannah, operating between the latter port and New York and Boston. (37 I. C. C. 422.)

*Peninsular & Occidental Steamship Company. Opinion by Commissioner Meyer:*

The Florida East Coast and the Atlantic Coast Line are allowed to continue their joint ownership of the Peninsular & Occidental Steamship Company, operating three boats for passengers and freight—(1) Between Miami, Fla., and Nassau, Bahama Islands; (2) between Key West, Fla., and Havana, Cuba, and (3) between Port Tampa, Fla., and Havana via Key West. (37 I. C. C. 432.)

*The Boat H. B. Plant. Opinion by Commissioner Meyer:*

The Atlantic Coast Line is allowed to continue the operation of the H. B. Plant, through the St. Petersburg Transportation Company. This boat is owned by the Atlantic Coast Line, but is operated by the St. Petersburg Transportation Company, which operates this and two other boats between Tampa, St. Petersburg, Terre Ceia Bay and Manatee river landings. (37 I. C. C. 453.)

#### Rates from Minnesota Points

*Holmes & Hallowell Company v. Great Northern et al. Opinion by Commissioner McChord:*

The commission finds that the rates on grain and other commodities from points in Minnesota and adjacent states to Duluth and other stations at the head of the lakes taking the same rates have not been shown to be unreasonable or unjustly discriminatory.

Class rates upon certain movements between points in Minnesota and points in adjacent states are held unreasonable or discriminatory.

The rates on anthracite and bituminous coal from Duluth and other points at the head of the lakes to points in Minnesota and adjacent states are not found unreasonable, but they are held to be unjustly discriminatory. The complaints are dismissed except in so far as they involve rates on anthracite and bituminous coal, which are reserved for further hearing.

The commission in its decision says: "This commission has always given due consideration and weight to state-made rates, but under the duty imposed upon it by law the commission must determine the reasonableness of interstate rates from all



of the pertinent facts and cannot accept rates prescribed for intrastate transportation as conclusive.

"Nor is it true, as seems to be assumed by counsel for some of the complainants, that the Supreme Court in the Minnesota rate case, *supra*, held the Minnesota rates to be reasonable. In that case it was merely decided that, except as to one carrier, the entire schedule of intrastate rates had not been proved confiscatory. The inherent reasonableness of particular rates was not in issue.

"As heretofore pointed out by the commission, a rate which is merely non-confiscatory may fall short of being entirely just and reasonable. The testimony indicates that the Minnesota rate schedules were not so made as to fix reasonable rates for the transportation of particular commodities between specified points in the state, but rather to establish such schedules as would in the aggregate yield a proper return upon the property devoted to state traffic. The testimony as to the alleged unjust discrimination in grain rates is exceedingly meager and unsatisfactory, consisting chiefly in a showing of the present elevation of the rates themselves. It affords no adequate basis for a finding that unjust discrimination exists." (37 I. C. C., 627.)

#### Industrial Railways

*Chicago, West Pullman & Southern. Opinion by Commissioner Meyer:*

Under the requirement of the commission in the Second Industrial Railways Case (34 I. C. C. 596), the Illinois Central here submits for approval the arrangement it proposes to make with the Chicago, West Pullman & Southern. This carrier is controlled in the interests of the International Harvester Corporation. It operates trackage at Irondale and West Pullman, both within the city limits of Chicago, and has trackage rights between the two places over the Illinois Central under certain conditions as to number of trains, hours, etc. The commission orders the Illinois Central and other carriers connecting with the West Pullman to revise their joint rates or switching arrangements with the West Pullman in conformance with the following principles: Where a trunk line permits an industrial line to operate over trunk line tracks, the arrangement may be just and proper so long as it is for their mutual benefit and does not prevent the trunk line from performing its public duties. Insofar as the division or allowance accorded the industrial line covers the operation over the tracks of the trunk line, the division or allowance may not exceed the operating and investment cost to the trunk line had the trunk line performed the same service by more than the proportionate share which that particular traffic should bear of the compensation paid by the industrial line for the use of the tracks; nor may the division or allowance exceed what would be just and proper under the principles applicable where the operation is over the tracks of the industrial line. (37 I. C. C. 408.)

*Indiana Northern Railway. Opinion by Commissioner Meyer:*

The Indiana Northern, a road 1.6 miles long at South Bend, Ind., is found to be a common carrier with which connecting lines may join in publishing through rates or to which they may grant allowances for interchange switching, although under no obligation to do so. An allowance for interchange switching greater than \$1.50 per car is found to be excessive. (37 I. C. C. 491.)

*Lorain & Southern Railroad. Opinion by Commissioner Meyer:*

The Lake Shore & Michigan Southern (New York Central) in April, 1914, canceled for interstate traffic a switching allowance of \$1 a car on carload shipments to and from the Lorain & Southern. The commission finds that the absence of this switching allowance subjects the traffic of the Ohio Quarries Company, owning the railroad, to an undue disadvantage and gives an undue preference in favor of the Cleveland Stone Company nearby and having rail connection with the Lake Shore. (37 I. C. C. 497.)

*Mohassuck Valley Railroad. Opinion by Commissioner Meyer:*

The present divisions of through rates (2 cents on the first three classes and 1 cent on classes 4, 5 and 6) accorded the Mohassuck Valley by the New Haven and other carriers are found reasonable. (37 I. C. C. 566.)

Commissioner Harlan dissents from the above decisions excepting that relating to the Indiana Northern.

*Chestnut Ridge Railway. Opinion by Commissioner Meyer:*

The Chestnut Ridge exchanges traffic from the east plant of the New Jersey Zinc Company of Pennsylvania with the Lehigh & Hudson River, receiving for a haul of about 100 yds. a switching allowance of \$2.00 a car. This allowance is found excessive to the extent that it exceeds \$1.00. (37 I. C. C. 558.)

#### STATE COMMISSIONS

The Wisconsin Railroad Commission on January 31 began a hearing at Madison on the application of the railroads of the state for increases in intrastate commodity rates, and the application of a number of Wisconsin shippers for various readjustments of the class rates. It was decided that the shippers should present their evidence first.

The residents of western Nebraska have complained to the Nebraska Railroad Commission because when the Union Pacific on January 15 put into effect the new increased passenger fares authorized by the Interstate Commerce Commission on the basis of 2.4 cents a mile for interstate business, it applied the increased rate to tickets between points in Nebraska reached by that part of its line which for a short distance runs through the state of Colorado.

The Missouri railroads have filed with the Missouri Public Service Commission a request for an interpretation and construction of the orders made by the commission in the Missouri general rate advance case, in which the commission allowed some slight general advances in freight and passenger rates throughout the state. The roads say they are in doubt as to whether the orders are mandatory or permissive in character. They ask the commission to inform them whether the rates, fares and charges in their entirety are mandatory or permissive, and if part—either freight or passenger or baggage rates—are mandatory, to state which class is mandatory and which permissive.

#### PERSONNEL OF COMMISSIONS

The governor of New York has appointed Travis H. Whitney, now secretary of the Public Service Commission, First district (New York City), to be a member of that body, to serve for the unexpired term of Commissioner G. V. S. Williams, resigned. This extends to February 1, 1917. The governor has reappointed for the full term of five years Frank Irvine, member of the Public Service Commission for the Second district.

#### COURT NEWS

The application of bondholders of the Pere Marquette for a preliminary injunction to prevent the state from enforcing the two-cent passenger fare law was denied in a decision rendered on January 31, by the judges of the United States District Court at Detroit.

Three judges of the United States district court at Los Angeles last week issued a temporary order restraining the Arizona Corporation Commission from enforcing the collection of a fine of \$5,000 against the Arizona Eastern for failure of the railroad to make certain reports ordered by the commission.

A hearing was held in the United States district court at Council Bluffs, Iowa, on January 25, on the application of Robert Abeles, owner of the Atlantic Southern Railroad, for an injunction to restrain the Iowa Railroad Commission from enforcing its order requiring the company to restore service on the southern part of its road. The line extends from Atlantic to Villisca, Iowa, a distance of 47 miles. On October 19 the physical property of the company was transferred to Abeles, who was a heavy creditor, and who declares that there is not enough business along the line to justify its operation.

The Atchison, Topeka & Santa Fe, the Missouri, Kansas & Texas, the Chicago, Rock Island & Pacific and the St. Louis & San Francisco last week filed in the United States District Court for the Western district of Oklahoma a petition for leave to file an amended application asking for an injunction restraining the enforcement of orders issued by the state corporation commission, dealing with freight rates in the state. The case before the court has been confined to the application for an injunction against the enforcement of the two-cent fare law.

The roads also announced the intention of asking for an order restraining the commission from enforcing an order, promulgated last November, which provided that no road should advance rates without obtaining the consent of the commission. Judge Youmans granted permission for the filing of the bill, and set February 28 as the date for a hearing. Governor Williams, of Oklahoma, in his message to the state legislature, has recommended an appropriation of \$25,000 for the expense of the state in connection with the two-cent fare litigation.

#### Hand Car Accident to Section Boss

In an action against a railroad by a track-repair foreman engaged in interstate commerce it appeared that he took a hand car with 13 men, besides himself, and worked on an adjoining section. While returning in the evening it began to rain, and one of the men under him let go of the handlebars to put on his coat. In so doing he lost his balance, and the plaintiff, in order to hold the man on the hand car, himself released his hold, fell from the car, and was injured. There was no evidence that the plaintiff had requested more hand cars or complained of the crowded condition of the car. The North Dakota Supreme Court held that the railroad was guilty of no negligence for which it was liable under the federal employers' liability act. The plaintiff, being the boss, could have made two trips to bring home this gang on the company's time, if he had so desired. There was no rule or regulation or order from any source requiring him to take this load at one time. He could have stopped the car while the men put on rain coats.—*Manson v. G. N.* (N. D.) 155 N. W. 32.

#### Seat Statute Making Connecting Carriers of Intrastate Commerce Agents of Each Other Held Valid

The South Carolina Statute of 1912 declaring that connecting carriers of intrastate traffic are to be deemed agents of each other, and that either may be sued by a shipper is held by the United States Supreme Court to be valid and constitutional. The question was raised in an action by a shipper of cattle against the Atlantic Coast Line, a connecting carrier, for damages for delay. The movement was wholly within the state. The defendant asserted that the delay, if any, had not occurred on its line, but on that of the Southern, the initial carrier, and that it was therefore not liable, relying on a provision in the contract of shipment declaring that the responsibility of each carrier should cease on delivery to the next or to the consignee, and that the lines were not liable for the negligence of each other. It was held that the state statute was rightly applied to the case, which was controlled by *Atlantic Coast Line v. Riverside Mills*, 219 U. S. 168, holding the Carmack Amendment constitutional, the reasoning by which that statute was held valid applying equally to a state statute regulating intrastate commerce.—*Atlantic Coast Line v. Glenn*. Decided December 20, 1915.

#### Verdict for Excessive Damages Reduced

In an action for wrongful death under the employers' liability act by the widow of an employee in a railroad's bridge and building department, on behalf of herself and her two children, aged three and five, the jury—finding the deceased was killed by negligence of a fellow servant, causing a collision between a speeder and a handcar—the jury returned a verdict for \$18,000. On appeal, this was held to be excessive, in view of the facts, which the court stated to be as follows:

The deceased's earnings while at work did not appear. He was 35 years of age and had been married about seven years. After his marriage he worked in a wholesale grocery house for about six months at \$55, which was raised to \$75. Immediately before working for the railway company he worked for a delivery company at \$45 a month.

If the action had been brought under the Minnesota law, the amount of recovery would have been limited to \$7,500; but this limitation does not apply to actions brought under the federal law. The amount of recovery in such actions, however, while left largely to the jury, must not exceed the probable pecuniary benefits which his family would have received if he had remained alive. Interest at the rate of 6 per cent per annum on the amount of the verdict would produce an income of \$90 a month, a larger amount than the deceased had ever earned, and nearly

double the amount he was earning during the last three years of the time for which his earnings were given. The law limits recovery to a sum which would procure an annuity equivalent to the probable pecuniary benefits for the period covered by the life expectancy of the deceased. The part of his earnings which the deceased, if living, would expend on himself cannot be included. The court therefore ordered a new trial unless the plaintiff should consent to a verdict reduced to \$12,000.—*Nash v. Minneapolis & St. Louis* (Minn.), 154 N. W., 957.

#### Duty Toward Licensees on Tracks—Negligent Switching

The question of the duty of a railroad to a licensee has just come up squarely for decision in the Oklahoma Supreme Court for the first time in an action for the death of a man who was walking along a side track which had been used ever since the railroad was built as a short cut from the east to the west part of the town of Keokuk. An engine pulling some cars had gone north on the main line, and on reaching the north end of the side track, on which the deceased was walking south, it kicked seven cars, with no brakeman on them, into the side track. The cars ran over the man and cut his body in two. The court held that, regardless of the fact that the person injured was a bare licensee on the track, the company, in such a case, is bound to exercise that degree of care and watchfulness to protect human life that is commensurate with the probability that persons may be on the track at any given point. In making switching movements, where the employees know or should know that there are likely to be human beings on the track, to push or "kick" cars without a brakeman on the lookout, is gross negligence. Judgment for the defendant was reversed.—*Wilhelm v. M., O. & G.* (Okla.), 152 Pac., 1088.

#### Proximity of Parallel Tracks in Yards Not Negligence

The distance between the two parallel tracks in that part of the Reading Company's Noble Street yard in Philadelphia running along Front Street is much less than the general standard. Box cars moving on them have barely room to pass. An experienced fireman on a night switcher, while his engine was moving five miles an hour, attempted to procure drinking water at a tap in the side, near the bottom, and three feet from the front of the tender; in so doing his body was extended outside the line of both tender and engine and crushed by contact with a freight car standing on the other track. In an action for his death the plaintiff contended that the railroad negligently constructed and maintained these tracks too near each other. The United States Supreme Court holds that a nonsuit was properly entered. A railroad company is not to be held as guaranteeing absolute safety to its employees under all circumstances. A railroad yard where trains are made up necessarily has a great number of tracks close to one another; and certainly the mere existence of such conditions is not enough to support an inference of negligence where, as here, it is necessary to utilize a public street.—*Reese v. Reading*. Decided December 20, 1915.

#### Fire—Personal Property on Right-of-Way Without Company's Consent

In an action against a railroad to recover for cotton set on fire by sparks from a locomotive, the cotton being on the railroad right-of-way, where it had been delivered for transportation, the Arkansas Supreme Court holds that it was a good defense that the plaintiff delivered the cotton without shipping directions, in violation of a rule of the company which the plaintiff knew, that "all persons delivering cotton without shipping directions would do so at their own risk," and in spite of the warning of the station agent that the cotton would remain on the platform at the plaintiff's risk. The Arkansas statute making railroads liable for damages to property caused by fires applies only to property located where the owner has a lawful right to have it. In the present case, however, the railroad did not claim, in defense, the rule about owner's risk until the trial, and it was held that the refusal of the trial court to allow the railroad to amend its answer to set up the new defense was not in abuse of the court's discretion, since the trial was not had until six months after the original answer was filed, and the defendant had had full opportunity to ascertain the facts of the defense.—*St. Louis, I. M. & S. v. Cooper & Ross* (Ark.), 180 S. W., 203.



## Railway Officers

### Executive, Financial, Legal and Accounting

E. I. Grenfell, auditor for the Ft. Worth & Denver City, has resigned to accept a position in the auditing department of the Denver & Salt Lake.

H. F. Baker, vice-president and secretary of the Lehigh & New England at Philadelphia, has resigned, and Henry H. Pease, treasurer, has also been elected secretary, vice Mr. Baker.

The title of Allan P. MacKinnon, solicitor of the Boston & Maine at Boston, Mass., has been changed to assistant general solicitor. Ralph T. Damon, claim agent at Concord, N. H., has been appointed general claim agent, with office at Boston; he will report to Mr. MacKinnon.

J. Walter Coon, assistant to general manager of the Baltimore & Ohio, at Baltimore, Md., has resigned to take a position with W. H. Williams, chairman of the board of directors and chairman of the executive committee of the Wabash, vice-president of the Delaware & Hudson and director of the Missouri Pacific, at New York.

### Operating

H. A. Empie has been appointed assistant trainmaster of the Delaware & Hudson, with office at Oneonta, N. Y., vice F. W. Bradt, resigned.

R. U. Lipscomb has been appointed assistant superintendent of the Galveston, Harrisburg & San Antonio at El Paso, Tex., vice F. Wessel, who has been granted a leave of absence.

F. R. Rockwell has been appointed general superintendent of The Salt Lake City Union Depot & Railroad Company, vice A. B. Apperson, resigned to become vice-president and general manager of the United States Fuel Co., of Salt Lake City, Utah.

T. Filskov, engineer maintenance of way and structures of the Raritan River, at South Amboy, N. J., has been appointed acting superintendent, vice C. M. Himmelberger, resigned to go to another company. C. M. Bloom has been appointed chief dispatcher.

I. E. Palmer, trainmaster of the Chicago Great Western at East Stockton, Ill., has been appointed assistant superintendent at Chicago, Ill. J. M. Reines succeeds Mr. Palmer. C. J. Cavanaugh, trainmaster at Chicago, has resigned to become superintendent of the Chicago Junction, at Chicago.

H. R. Hanlin, general manager of the Dayton & Union Railroad, and superintendent of the Dayton Union Railway, at Dayton, Ohio, has been appointed superintendent of the New York terminal properties of the Baltimore & Ohio, with headquarters at St. George, Staten Island, N. Y., and J. L. Terrant has been appointed assistant superintendent vice F. C. Syze, transferred. The positions of general superintendent and assistant general superintendent have been abolished.

### Traffic

Henry C. Kline has been appointed division passenger agent of the Wabash, with headquarters at Chicago, Ill.

W. H. Abel, assistant passenger traffic manager of the Chicago & Alton, with headquarters at St. Louis, Mo., has been transferred to Chicago, Ill.

Clarence A. Blood, traffic assistant of the Lehigh Valley at New York, after 38 years' service with this road, at his own request was relieved of his active duties on February 1.

E. S. Stewart, assistant advertising agent of the Pennsylvania Railroad, has been appointed advertising agent, with office at Philadelphia, Pa., succeeding F. N. Barksdale, deceased.

C. W. Axtell, agent of the Union Pacific Transfer, Council Bluffs, Ia., has been appointed assistant general freight agent for the Union Pacific, with office at Omaha, Neb. Effective February 1.

C. S. Shoemaker, assistant to the general passenger agent of the Pittsburgh, Cincinnati, Chicago & St. Louis, has been appointed general baggage agent of the Pennsylvania Lines West, vice R. R. Bentley, retired.

E. H. Dallas, district passenger agent of the Gulf, Colo-

rado & Santa Fe at San Antonio, Tex., has been appointed general agent, passenger department, Santa Fe lines, with office at Atlanta, Ga. Effective February 1.

Charles Shackell, assistant general freight and passenger agent of the Ft. Dodge, Des Moines & Southern, has been appointed general freight and passenger agent, with headquarters at Boone, Ia., vice John L. Sullivan, resigned.

Fred H. Tristram, assistant general passenger agent of the Wabash, with office at Chicago, Ill., has been promoted to general passenger agent, with headquarters at St. Louis, Mo. Mr. Tristram was born at South



F. H. Tristram

Norwalk, Conn., and entered railway service in 1888, as passenger agent for the Columbus, Hocking Valley & Toledo at Columbus, Ohio. In October, 1888, he entered the employ of the Wabash, St. Louis & Pacific in a similar capacity, with headquarters at Toledo, Ohio. From October 1, 1889, to January 1, 1902, he was central passenger agent for the same road, now the Wabash, with office at Pittsburgh, Pa. From January, 1902, to December, 1905, he was assistant general passenger agent for the Wabash at Pittsburgh, at the same time representing the Wabash Pittsburgh Terminal. He was also assistant general passenger agent of the Wheeling & Lake Erie, from August 8, 1904, to December, 1905. From the latter date up to the present time he has been assistant general passenger agent of the Wabash, at Chicago, Ill. His promotion is effective February 1.

W. B. Howard, district passenger agent of the Canadian Pacific, at St. John, N. B., has been appointed district passenger agent with office at Toronto, Ont., and M. G. Murphy, who held a similar position at Toronto, Ont., has been appointed district passenger agent at St. John.

Thornton Lewis, whose appointment as assistant freight traffic manager of the Chesapeake & Ohio with headquarters at Cincinnati, Ohio, has already been announced in these columns, was



T. Lewis

born on December 19, 1863, at Hamilton, Ohio. He was educated in the public schools at Chicago and began railway work on December 1, 1888, with the Cincinnati, Indianapolis, St. Louis & Chicago and served as contracting agent at Chicago on this road and its successor, the Cleveland, Cincinnati, Chicago & St. Louis until 1891, and then as live stock agent until 1892. He was then appointed agent of the Kanawha Dispatch, and two years later was made chief clerk to the manager of the Kanawha Dispatch at Cincinnati, Ohio. In 1897 he became acting manager and the following year was made manager of the Kanawha Dispatch. Since 1903 he served also as general western freight agent of the Chesapeake & Ohio, and on January 1, 1916, was appointed assistant freight traffic manager of the same road. Mr. Lewis continues also as manager of the Kanawha Dispatch.

W. L. McWhirter, general agent for the Gulf, Colorado & Santa Fe at New Orleans, La., has been transferred to Ft. Worth, Tex., with the title of division freight agent. S. G. Dickerson, commercial agent at Ft. Worth, has been appointed general agent, passenger and freight departments, with office at New Orleans, La. Effective February 1.

J. W. Perrin, general freight agent of the First division of the Atlantic Coast Line at Wilmington, N. C., has been appointed assistant freight traffic manager, and C. McD. Davis, general freight agent of the Second division at Savannah, Ga., has been appointed general freight agent. Both will have jurisdiction over the entire line and offices at Wilmington, N. C. G. L. Tillery has been appointed assistant general freight agent, with office at Wilmington.

#### Engineering and Rolling Stock

L. C. Ryan, roadmaster of the Chicago & Northwestern at Sterling, Ill., has resigned.

G. F. Smith has been appointed master mechanic of the Colorado, Kansas & Oklahoma.

I. A. Cottingham has been appointed special engineer in charge of valuation work on the Sunset-Central Lines.

Thomas F. Howley, inspector of locomotive service of the Erie, at Port Jervis, N. Y., has been promoted to superintendent of locomotive operation, with office at New York, succeeding W. C. Hayes, deceased.

G. H. Langton, master mechanic of the Seaboard Air Line at Raleigh, N. C., has been appointed shop superintendent of the Portsmouth, Va., shops, vice L. D. Freeman, who has been granted leave of absence on account of ill health, and A. C. Adams has been appointed master mechanic of the Virginia division at Raleigh, vice Mr. Langton.

E. B. Cushing, who has been appointed assistant general manager in charge of maintenance of way and structures for the Sunset-Central lines, was born at Houston, Tex., on November 22, 1862. He was educated at the Agricultural and Mechanical College of Texas. In 1879 he entered railway service as an axman for a surveying party on the Galveston, Harrisburg & San Antonio. In 1882 he had charge of a preliminary survey for the Mexican International, from Piedras Negras, on the Rio Grande, to Paila, Mexico. He became an engineer of the track department of the Southern Pacific, Texas lines, in 1883. He was appointed engineer in charge of reconstruction work and the improvement of operated lines, in 1886. In 1887 he entered the service of the Santa Fe system as chief clerk and office engineer in the chief engineer's office, and later was appointed assistant engineer in charge of roadway, bridges and buildings. He re-entered the employ of the Southern Pacific lines in 1889, as resident engineer. In 1897 he was appointed general superintendent and chief engineer of the Houston East & West Texas, and the Houston & Shreveport. When the Southern Pacific lines acquired these railways in 1901 he became engineer, maintenance of way, of lines between El Paso and New Orleans. In 1904 he was appointed general superintendent of lines in Louisiana, and in 1908 was appointed chief engineer of construction of the Texas-Louisiana system, which position has recently been abolished and the duties combined with those assumed by him as assistant general manager.

#### Purchasing

E. W. Myers has been appointed storekeeper of the Duluth, Winnipeg & Pacific at Virginia, Minn., vice F. S. Matthey, resigned.

## Equipment and Supplies

### LOCOMOTIVES

THE ERIE is inquiring for prices on 15 six-wheel switching locomotives.

THE HILO RAILWAY, Hawaii, is inquiring for 2 oil-burning Consolidation locomotives.

THE CHICAGO & NORTH WESTERN is inquiring for 35 switching locomotives for hump yard service.

THE NEW YORK CENTRAL is understood to be contemplating the purchase of possibly 150 locomotives.

THE CHICAGO JUNCTION has ordered 5 switching locomotives from the American Locomotive Company.

WORTH BROTHERS COMPANY has ordered two six-wheel locomotives from the Baldwin Locomotive Works.

THE FRENCH GOVERNMENT is reported to have ordered 80 small locomotives from the Baldwin Locomotive Works.

THE BELT RAILWAY OF CHICAGO is contemplating the purchase of three switching locomotives for hump yard service.

THE TIDEWATER OIL COMPANY has ordered one six-wheel switching locomotive from the Baldwin Locomotive Works.

THE FAIRPORT, PAINESVILLE & EASTERN, 807 Wabash building, Pittsburgh, has ordered one six-wheel switching locomotive from the Baldwin Locomotive Works.

THE BESSEMER & LAKE ERIE, reported in last week's issue as having issued an inquiry for 20 locomotives, is inquiring for prices on 20 Mikado locomotives.

THE VERDE TUNNEL & SMELTER RAILROAD has ordered one six-wheel switching locomotive from the American Locomotive Company. This locomotive will have 21 by 26-in. cylinders, 50-in. driving wheels and a total weight in working order of 160,000 lb.

CARBONES DE LA NUEVA (through Ballesteros), Madrid, has ordered one four-wheel tank engine from the American Locomotive Company. This engine will have 7 by 12-in. cylinders, 24½-in. driving wheels and a total weight in working order of 17,000 lb.

THE SOUTHERN PACIFIC, reported in the *Railway Age Gazette* of January 14 as being in the market for 20 Mikado locomotives, has ordered these locomotives from the American Locomotive Company. These engines will have 26 by 28-in. cylinders, 63-in. driving wheels and a total weight in working order of 281,000 lb.

THE MINERAL RANGE, reported in the *Railway Age Gazette* of December 31 as being in the market for 2 Consolidation locomotives, has ordered these engines from the American Locomotive Company. The locomotives will have 24 by 30-in. cylinders, 55-in. driving wheels and a total weight in working order of 220,000 lb.

### FREIGHT CARS

THE BALTIMORE & OHIO is inquiring for 500 refrigerator cars.

THE CHICAGO GREAT WESTERN is in the market for 200 center constructions.

THE CENTRAL OF GEORGIA has ordered 50 underframes from the Bettendorf Company.

THE WYOMING MINE COMPANY has ordered 100 mine cars from the Pressed Steel Car Company.

THE MODOC COAL MINE COMPANY has ordered 50 mine cars from the Pressed Steel Car Company.

THE SOUTH BUFFALO RAILWAY has ordered 310 freight cars from the Cambria Steel Company.

SWIFT & Co., reported in the *Railway Age Gazette* of January



E. B. Cushing



21 as building 100 refrigerators cars in its own shops, is building 150 of these cars.

THE IROQUOIS COAL MINE COMPANY has ordered 50 mine cars from the Pressed Steel Car Company.

THE NEW YORK CENTRAL is understood to be considering the purchase of 4,000 to 5,000 freight cars.

THE GULF SMOKELESS MINE COMPANY has purchased 50 mine cars from the Pressed Steel Car Company.

THE LIVE POULTRY TRANSIT COMPANY has ordered 100 poultry cars from the Haskell & Barker Car Company.

THE BETHLEHEM CHILE IRON MINES COMPANY, Bethlehem, Pa., reported in the *Railway Age Gazette* of December 24 as being in the market for 25 ore cars, has ordered these cars from the Pressed Steel Car Company.

THE BESSEMER & LAKE ERIE, reported in an unconfirmed item in the *Railway Age Gazette* of January 14 as having ordered 2,000 cars from the Standard Steel Car Company, has not purchased these cars, but has issued inquiries for 2,000 50 or 70-ton gondolas and 400 50-ton hopper cars.

THE ILLINOIS CENTRAL was mentioned in the issue of January 28 as being in the market for 300 stock and 1,000 coal cars. Formal inquiries have been issued for 300 40-ton, 40½ ft. steel frame stock cars; 300 50-ton, 40-ft. drop bottom gondola cars; 300 50-ton, 30-ft. hopper cars and 400 50-ton, 40-ft. work cars.

THE PENNSYLVANIA LINES WEST have ordered 1,000 all-steel automobile and 350 all-steel box cars from the Altoona shops. The automobile cars are for the Pennsylvania Company and the Pittsburgh, Cincinnati, Chicago & St. Louis. Of the box cars, 200 are for the Vandalia and 150 for the Grand Rapids & Indiana.

### PASSENGER CARS

THE WABASH is building a business car in its own shops.

THE CHESAPEAKE & OHIO has ordered two 73-ft parlor cars from the Pullman Company.

THE PENNSYLVANIA EQUIPMENT COMPANY, Philadelphia, is in the market for a second-hand standard gage steam-propelled car or coach capable of pulling two or three additional cars.

THE FAIRBURN & ATLANTA has ordered from the Railway Storage Battery Car Company, New York, three Edison storage battery cars to operate over its line from College Park, Atlanta, Ga., to Fairburn. The battery cars will replace four gasoline propelled cars. They will serve this community from 6 a. m. to 11 p. m. in an hourly service. They will be of the standard suburban type, equipped for double-end operation and will seat 44 passengers. M. C. B. semi-steel construction will be followed throughout.

### SIGNALING

THE CHICAGO & NORTH WESTERN has authorized the construction of 54 miles of automatic block signals between Wisconsin, Wis., and Fond du Lac.

THE MISSOURI PACIFIC-IRON MOUNTAIN SYSTEM has ordered 66 automatic electric block signals with other necessary materials for installation. Arrangements as to location and details of installation are to be made later.

THE CINCINNATI, HAMILTON & DAYTON has authorized the installation of 39.9 miles of single-track, and 33.3 miles of double-track automatic signaling in addition to the 21 miles of double-track previously reported. A joint interlocking plant will also be built by the C., H. & D., and the Ft. Wayne, Lake Erie & Western, at Lima, Ohio. This plant will probably cost \$50,000.

THE BALTIMORE & OHIO SOUTHWESTERN has recently completed the installation of telephone train despatching circuits between Cincinnati, Ohio, and Parkersburg, W. Va. This is divided into two circuits, one of which has 36 stations, and the other 24 stations. This work was done by company forces under the direction of the superintendent of telegraph. There has also been granted authority for additional circuits from Washington, Ind., to St. Louis, Mo. When this work is completed telephone train despatching will be in operation throughout the line from Parkersburg, W. Va., to St. Louis.

## Supply Trade News

Frederick H. Eaton, president of the American Car & Foundry Company, died in New York, Friday, January 28.

F. O. Bunnell, engineer of tests of the Chicago, Rock Island & Pacific, has resigned, to become chief engineer of the Southern Wheel Company, St. Louis.

George L. Wall, vice-president and manager of the Lima Locomotive Corporation, has resigned and taken an office at room 219, Opera House block, Lima, Ohio.

G. O. Bates has been appointed southern representative of the Chicago Railway Signal & Supply Company, Chicago, with headquarters at Avenue H and Thirtieth street, Chattanooga, Tenn.

Watson H. Linburg, president of the United & Globe Rubber Manufacturing Companies, Trenton, N. J., died on January 6. Mr. Linburg was one of the pioneers in the manufacture of air-brake hose and other mechanical rubber goods used by the railroads.

H. S. Norris, special sales agent for the U. S. Metal & Manufacturing Company, New York, has resigned from that position to become manager of railway sales for the C. A. Willey Company, railway paint specialties, Long Island City, N. Y., effective February 15.

William H. Woodin, assistant to president of the American Car & Foundry Company, was on February 1 elected president of that company, succeeding Frederick H. Eaton. Mr. Woodin



W. H. Woodin

received a technical education at Columbia University, School of Mines. He worked his way through the shops of the Jackson & Woodin Manufacturing Company, Berwick, Pa., which company had been established by his grandfather in 1842, and was one of the companies amalgamated with the American Car & Foundry Company at the time of that company's organization. In 1892 he had become general superintendent of the Jackson & Woodin Manufacturing Company, and continued as such until 1895. From 1895 to 1899 he was vice-president, and in 1899 when the

American Car & Foundry Company was formed, became district manager of the Berwick plant, the largest car building plant in the country. Since 1902 Mr. Woodin has been a director and assistant to president of the American Car & Foundry Company, having general direction, under Mr. Eaton, as president, of its affairs.

The entire plant of the Cincinnati Equipment Company, consisting of about 13 acres of land, buildings, tracks and switching rights, situated on the Ohio river and extending to the Baltimore & Ohio and Cleveland, Cincinnati, Chicago & St. Louis tracks, at Cincinnati, Ohio, will be disposed of at a trustee's sale in bankruptcy. H. C. Ezekiel, 610-614 Provident Bank building, Cincinnati, is agent for the trustee.

The Chicago Railway Equipment Company held its annual dinner at the Union League Club in Chicago last Tuesday night. President E. B. Leigh presided. The guests included numerous prominent business men in addition to the officers of the company. The addresses were on the subject of preparedness, and the speakers included Mr. Leigh, Charles S. Gleed, W. E. Clow, E. S. Conway, Bruce U. Crandall and Arthur Wyman.

Herbert W. Wolff has been appointed vice-president of the American Car & Foundry Company, in charge of sales, with office at Chicago, effective on January 27. Mr. Wolff was born on December 27, 1873, and was educated in the public schools of Detroit, Mich. He began his business career as an employee of the Michigan Car Company at Detroit in 1886. When the Michigan and Peninsular car companies were merged in 1892 under the name of the Michigan Peninsular Car Company, he remained in the service of the consolidated corporation. He was assistant mechanical engineer of this company in 1899, when the American Car & Foundry Company was formed, and went to St. Louis, Mo., to become chief mechanical engineer of the new company. In 1912 he was appointed assistant to the vice-president, with headquarters at St. Louis, a position which he continued to hold up to the time of his recent promotion to the vice-presidency.

Albert H. Scherzer, president and chief engineer of the Scherzer Rolling Lift Bridge Company, Chicago, died on January 28, as a result of a fall down an elevator shaft in the Monadnock block, where the offices of the company are located. Mr. Scherzer was born at Peru, Ill., on July 22, 1865, and attended the public and high schools of that city, after which he graduated from the Polytechnicum at Zurich, Switzerland, and later from the Union College of Law, of Chicago, in 1892. He engaged in the practise of law until the death of his brother, William, the inventor of the Scherzer rolling lift bridge, when he became president and chief engineer of the Scherzer Rolling Lift Bridge Company. In that capacity he designed and built many large and important railway, electric railway and highway bridges, both in the United States and abroad, and he was also the inventor of many improvements in bridge design. He was a frequent contributor to scientific and technical publications on subjects relating to bridge engineering, ship canals and the improvement of rivers, harbors and transportation facilities.

DeWitt V. Moore, district engineer, Central district, division of valuation Interstate Commerce Commission, Chicago, has resigned to engage in consulting practice at Chicago, specializing in valuation matters, particularly with the smaller carriers. He has been connected with the federal valuation work as district engineer since its inauguration two and a half years ago. Previous to that time Mr. Moore was with the engineering department of the Pennsylvania Lines for 10 years, after which he was engaged in consulting practice at Indianapolis for 10 years, during which time he made examinations and reports for a number of electric lines which were later built. He also specialized in concrete and reinforced concrete design. He left his consulting practice in 1913 to take up the federal valuation work as above.

Arthur William Wheatley, vice-president and general manager of the Canadian Locomotive Company, Ltd., Kingston, Ont., has been elected president of the Lima Locomotive Corporation.

Mr. Wheatley was born at Ashford, Kent county, England, October 12, 1870. At the age of 15 he became a rivet boy in the shops of the South Eastern Railroad, and in 1887 apprenticed himself as a machinist, attending the night school, conducted by the railroad. In 1892 he came to America, finding employment on the Northern Pacific at Brainerd, Minn., as a machinist. In 1893 he was transferred to Staples, Minn., in the same position. In 1895 he was made foreman, occupying that position until 1900. He was transferred to Livingston, Mont., as general foreman in December, 1902, and later was made master mechanic of the Yellowstone division, with headquarters at Glendive, Mont. In June, 1903, he was appointed shop superintendent at Brainerd, becoming in April, 1904, general master mechanic of the entire Northern Pacific system. In February, 1905, he accepted a position on the Rock Island as shop superintendent at Moline, Ill., leaving one year later to become assistant superintendent of motive power of the Union Pacific, with headquarters at Omaha. In June, 1907, he left railway service and entered the employ of the American Locomotive Company at Schenectady as general inspector, introducing a system of inspection at the various plants. In December of the same year he was transferred to Montreal as manager of the Montreal Locomotive Works. November, 1910, he was placed in charge of the Dunkirk plant, but in June, 1911, left to accept the position of vice-president and general manager of the Canadian Locomotive Company, Ltd. Mr. Wheatley will take up his new duties on March 1. He will have headquarters at Lima, Ohio.

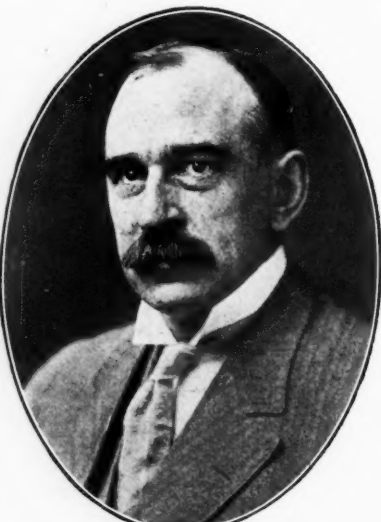
Frederick Heber Eaton, president of the American Car & Foundry Company and chairman of its executive committee since June, 1901, died at his residence in New York City, January 28. Mr. Eaton had been a commanding figure in the car manufacturing industry for many years. He was born at Berwick, Pa., April 15, 1863. He obtained his early business experience as chief clerk in the office of the Berwick Rolling Mill Company, then a subsidiary of the old Jackson & Woodin Manufacturing Company. From 1892 to 1899 he was successively secretary, vice-president and president of the Jackson & Woodin Company at Berwick. In 1899 he was an important factor in the formation of the American Car & Foundry Company and was chosen for the position of first vice-president. In June, 1901, he succeeded to the presidency and to the chairmanship of the executive committee, which office he continuously held until his death on January 28. Mr. Eaton was also chairman of the board of the American Car & Foundry Export Company.



H. W. Wolff



A. W. Wheatley



A. H. Scherzer



F. H. Eaton



## TRADE PUBLICATIONS

**PORTABLE STEEL BUILDINGS.**—The Trussed Concrete Steel Company, Youngstown, Ohio, has issued a 32-page booklet describing its portable steel buildings for railroads, contractors and general use. The book is illustrated with photographs showing the form of construction.

**FLOOR TREATMENT.**—The Minwax Company, New York, has just issued Bulletin No. 3 of a series started last year. This bulletin describes Minwax floor filler and finish and its use. It also contains photographs of a number of large buildings in which the floors have been treated with this material.

**MACHINE TOOLS.**—The Niles-Bement-Pond Company has recently issued four folders relative to its machine tools. Circular No. 101 illustrates and describes a 48-inch car wheel borer; circular No. 102, a center drive car wheel lathe; circular No. 103, a 36-44 inch side head boring mill, and circular No. 104 a 90 inch driving wheel lathe, heavy pattern.

**SOUTHERN YELLOW PINE TIMBERS.**—The Southern Pine Association, New Orleans, La., has issued a 48-page booklet containing the specifications for Southern yellow pine adopted last year by the American Society for Testing Materials and descriptions of the experiments of the United States Forest Service leading to the adoption of these specifications. The book contains much information of interest to users of this class of timber.

**TIMBER PRESERVING MACHINERY.**—The Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has issued a 36-page illustrated booklet on the subject of timber preservation and the equipment for a wood preserving plant. The book contains a large amount of information concerning the different processes of timber preservation and plant construction, with a number of photographs of plants in various portions of the country. This book also contains a number of tables of special value to anyone interested in this subject.

**ELECTRIC INDUSTRIAL TRUCKS.**—The Elwell-Parker Electric Company, Cleveland, Ohio, has just issued a 40-page booklet describing its electric trucks for use in freight houses, baggage rooms, shops and factories. The book describes both the platform and tractor trucks and the details of their construction, and also contains specifications for the various types of trucks manufactured by this company. The book is well illustrated with a large number of photographs showing the various types of trucks in actual service in railway and other buildings.

**CONDUIT CHART.**—The National Metal Molding Company, Pittsburgh, Pa., manufacturers of electrical conduits and fittings, is distributing an attractive wall hanger, reproducing, in one-half actual size, conduit charts as adopted and recommended by the National Electrical Contractors' Association, showing sizes of conduit required by the National Electrical Code for carrying various sizes of conductors. This hanger is printed on linen-backed stock and will prove of convenience for reference in the offices of architects, engineers and electrical contractors.

**BALL BEARINGS.**—The Norma Company of America, New York, has issued Catalog No. 105 describing, illustrating and giving list prices of the Norma precision bearings made by the company. A large part of the booklet is devoted to a description of the Norma ball bearings. The various types of bearings are shown in halftone and line illustrations and the accompanying reading matter discusses the design of the bearing and its advantages for various kinds of service. A large part of the booklet is devoted to lists of bearings, giving the dimensions, types and list prices.

**STORAGE BATTERIES.**—Two of the recent publications of the Edison Storage Battery Company are entitled, respectively, "The Edison Alkaline Storage Battery" and "Edison Alkaline Storage Batteries and Some of Their Applications." The former booklet has been issued as Monograph III of the National Education Association Joint Committee Series. It describes the manufacture of the Edison batteries—and in one of its chapters takes the reader on a trip through the factory in Orange, N. J. The booklet also touches upon some of the characteristics of the battery, dealing with its chemistry, its advantages, its approach to the ideal battery, etc. The other bulletin mentioned considers the possible use of Edison batteries and their advantages for various kinds of service. Both booklets are illustrated.

## Railway Construction

**AUGUSTA & WESTERN.**—Under this name a company has been organized with \$100,000 capital and principal office at Augusta, Ga. The plans call for building a line to connect Augusta and Athens, traversing the counties of Richmond, Columbia, McDuffie, Wilkes, Oglethorpe and Clarke, about 95 miles. The incorporators include W. J. Twiggs, G. W. Wright, J. W. Dickey, P. H. Rice, Augusta; R. W. Lamkin, Athens; C. O. Stevens, Crawford; W. T. Johnson, Washington; L. E. Blanchard, Harlem.

**ERIE RAILROAD.**—A contract has been let to the Robert Grace Contracting Company, Pittsburgh, Pa., for double track work, between Lomax, Ind., and Griffiths, 35 miles. This work completes the double tracking on the Chicago & Erie division.

**GARDEN CITY, HASTINGS & OMAHA.**—Incorporated in Kansas with \$100,000 capital to build a railway from Garden City, Kan., northeast to Stockton, 163 miles. An extension is to be built from Garden City southwest to the south line of Kansas in Morton county. A branch is to be built from Ogallah east about 30 miles to Hays, and another branch is to be built from Stockton northwest to the Kansas-Nebraska state line. The plans call for eventually extending the line northeast from Stockton to Omaha, Neb. The incorporators include G. W. Finnup, F. Dunn, A. C. Wheeler and W. A. Phipp, Garden City, and F. T. Burns, Kansas City, Mo.

**HIAWASSEE VALLEY.**—Contracts are reported let to J. N. Baker, Knoxville, Tenn., and to A. M. Cook, Harriman, Tenn., to lay track and equip this line from Andrews, N. C., southwest to Peachtree, thence southeast to Hayesville, 25 miles. The Wright-Johnson Company, Andrews, carried out the grading work. S. E. Cover, president, Andrews, Tenn. (October 22, p. 779.)

**HOUSTON, RICHMOND & SAN ANTONIO INTERURBAN.**—Financial arrangements for the construction of the railway from San Antonio, Tex., east to Houston, about 215 miles, have been made, according to an announcement of President Edward Kennedy, of Houston. It is understood that the grading work will be started about February 20. Electric power for operating the line will be developed by hydro-electric plants, to be constructed on the Guadalupe river. The first section to be built will be between San Antonio and Seguin, 30 miles. (December 17, p. 1177.)

**INTERSTATE RAILROAD.**—A contract has been let to L. O. Pettet, Big Stone Gap, Va., to build a one-mile spur line from a point on the Virginia & Southwestern, between Imboden, Va., and Keokee, along Pigeon creek to a saw mill. The line is to be built to carry lumber, and eventually coal.

**MIAMI TRACTION.**—This company will sell \$200,000 of bonds, it is said, the proceeds of which are to be used for building a line to connect Miami Beach, Fla., West Palm Beach, Florida City and other points. Plans are also being considered to build an extension west, via Lake Okeechobee. J. H. Tatum, president, Miami.

**MIDLAND & NORTHWESTERN.**—This company plans to begin grading work on or about March 1 and track laying in June. A roundhouse and shop are contemplated at Midland, Tex., and four depots at various places on the line. Thomas J. O'Donnell, president, Midland, Tex. (January 26, 1916, p. 185.)

**NEW YORK SUBWAYS.**—The New York Public Service Commission, First district, has readvertised for bids to be opened on February 10, for the installation of tracks, on the White Plains road extension of the Lenox avenue branch of the existing subway. (December 17, p. 1177.)

**SOUTH CAROLINA ROADS.**—Northern capitalists have under consideration the question of building a railroad, it is said, from Spartanburg, S. C., south via Walnut Grove, and Cross Anchor to Clinton, about 30 miles. L. H. Wilson, Cross Anchor, and T. B. Thackston, Cedar Springs, may be addressed.

**TUSCALOOSA RAILWAY & UTILITIES COMPANY.**—This company

will build a spur track from its line in Tuscaloosa, Ala., to the Mobile & Ohio station. Extensive improvements are also to be carried out on its line from Tuscaloosa northeast to Holt. F. S. Morris, president; C. R. Carter, vice-president, Tuscaloosa.

**VIRGINIAN RAILWAY.**—A contract has been given by this company to the Walton Construction Company, Falls Mills, Va., to build the Piney Creek branch from Pemberton, W. Va., along Piney creek to Leckie, 7.5 miles. There will be five steel bridges on the line varying from 35 ft. to 100 ft. each, and a tunnel 350 ft. long near Pemberton. The Walton Construction Company has contracts also for building the bridges and constructing the tunnel.

**WASHINGTON & LINCOLNTON.**—A contract was let recently to the Morrow Construction Company, Atlanta, Ga., for building this line and grading work is now under way. The projected route is from Washington, Ga., northeast to Metasville, about 10 miles. There will be about 300 ft. of trestles on the line. The company expects to develop a traffic in lumber and agricultural products. J. R. Dyson, president, Washington, Ga.; M. Mason, chief engineer, Atlanta. (January 7, p. 42.)

**WASHINGTON-NEWPORT NEWS SHORT LINE.**—This company plans to build a railway from Newport News, Va., north via Yorktown, thence over York river and via Gloucester, Saluda and Tappahannock to the Rappahannock river crossing, thence via Leedstown and a point north of Hampstead to the Potomac river crossing, thence to Riverside, Md. From this place the projected route is along the east bank of the Potomac river to a point in the District of Columbia thence to Washington. From Leedstown a branch is projected southeast via Montrose to Fairport on Chesapeake bay, in all about 210 miles. The work will not be difficult, the approximate amount of cut and fill work to the mile will be 27,000 cu. yd. on the main line and 14,400 cu. yd. on the branch line. The main line is to have a maximum grade of 0.4 per cent northbound and 0.5 per cent southbound, with maximum curvature of 3 deg. The company hopes to begin the construction work this year. On the main line there will be 3 steel bridges with an aggregate length of 10,165 lineal feet, and trestle approaches to these bridges of 4,835 lineal feet. In addition there will be 83 trestle bridges with a total length of 32,075 lineal feet; also a tunnel 1,320 ft. long and another tunnel 140 ft. long. On the branch line there will be 5 trestle bridges with an aggregate length of 2,010 lineal feet. Frank S. Gannon, president, 2 Rector street, New York. (January 21, p. 148.)

**WILLAMETTE PACIFIC.**—This road, a subsidiary of the Southern Pacific, 120.6 miles long, and extending from Marshfield, Ore., north through Reedport to Siboco and east to Eugene, has been completed except for about 10 miles of track, immediately north and south of the Umpqua river. Most of the structures have been completed with the exception of a few trestles and the Umpqua river bridge which is under construction. W. Hood, chief engineer, San Francisco, Cal.

## RAILWAY STRUCTURES

**DALLAS, TEX.**—The Stone & Webster Engineering Corporation has the contract for the new union interurban terminal now being constructed at Jackson and Browder streets. The improvements under way include the laying of 5,060 ft. of single track, the excavation of 14,000 cu. yd. of material for the foundation of the station and 4,000 cu. yd. for grading purposes, and the erection of a steel-frame, reinforced concrete station and office building with brick facing. The building will be of irregular shape, measuring 250 ft. in length, 107 ft. on one side and 45 ft. on the other, on the ground floor, and 170 ft. by 80 and 50 ft. above the second floor. The structure will be from 8 to 11 stories in height. The cost, including the real estate and incidental improvements, has been estimated at \$1,500,000. About 2 per cent of the work has been completed.

**FAR ROCKAWAY, N. Y.**—The New York Public Service Commission, First district, has ordered the elimination of eight dangerous grade crossings on the Far Rockaway branch of the Long Island Railroad. The cost of the improvements will be about \$1,150,000. The railroad company is to pay one-half and the state and the city each are to pay one-quarter of the cost of this work.

## Railway Financial News

**CHICAGO, MILWAUKEE & ST. PAUL.**—The directors have declared a semi-annual dividend of 2½ per cent on the common stock. This is a resumption of the 5 per cent annual rate. Six months ago a semi-annual dividend of 2 per cent was declared. For three and a half years previous to that, however, the annual rate was 5 per cent.

**MINNEAPOLIS & ST. LOUIS.**—In a circular to stockholders, Newman Erb, president of the Minneapolis & St. Louis, outlines the plan for reorganization of the company by a syndicate organized by Hayden, Stone & Co., and J. S. Bache & Company. This plan is to provide \$4,530,200 new money and has been underwritten by the above-mentioned syndicate. The circular says, in part:

"Preferred stockholders who join in the plan will receive, for each \$100 of preferred stock now held, \$150 in new stock upon the payment of \$20, while preferred stockholders who do not make such payment will receive \$70 in new stock.

"Common stockholders who join in the plan will receive for each \$100 of common stock now held, \$100 in new stock upon the payment of \$20, while common stockholders who do not make such payment will receive \$22 in new stock.

"Holders of upwards of 40 per cent of the outstanding capital stock of the company have already expressed their intention to deposit their stock and make the payments provided for.

"The assent of the holders of 75 per cent of the outstanding stock of the company is necessary to carry the plan into effect, the alternative being an involuntary reorganization with much attendant loss and expense to the company and stockholders."

**MISSOURI, KANSAS & TEXAS.**—A protective committee for the second mortgage 4 per cent bonds, on which interest was due February 1 and was not paid, has been formed consisting of Edwin G. Merrill, chairman; Lewis L. Clarke, P. J. Goodhart, W. J. Matheson and D. E. Pomeroy. Deposit of bonds is asked with the Union Trust Company.

**NEW YORK, NEW HAVEN & HARTFORD.**—Former United States Senator W. Murray Crane, of Massachusetts, has resigned from the board of directors.

**TEXAS & PACIFIC.**—Argument was heard this week in the suit which the Gould estate has brought against the Texas & Pacific on notes made by the Texas & Pacific to the St. Louis, Iron Mountain & Southern and taken over by the Gould estate from the St. Louis, Iron Mountain & Southern. The amount of these notes is \$1,741,000. The answer to the suit is made by Henry E. Cooper, a director of the company. An explanation was made as to why the answer was not filed by the executive officers of the company saying that George J. Gould is president of the company and Kingdon Gould is vice-president. The answer made by Mr. Cooper, representing a sub-committee of the directors, is that the Texas & Pacific never received value for the notes. This answer says that these notes were issued to pay coupons on the 5 per cent bonds of 1888, and that the provisions of the indenture securing these bonds are that interest should not be cumulative and that interest should only be paid if earned. The answer says that the interest was not earned and that notes were improperly issued to pay interest which was not under the provisions of the indenture due.

**VANDALIA.**—A dividend of 2 per cent has been declared, payable February 15. No dividend was declared in December, 1914.

**WABASH-PITTSBURGH TERMINAL.**—More than a majority of the \$30,236,000 first mortgage and \$20,000,000 second mortgage bonds of the Wabash-Pittsburgh Terminal have paid the assessment called for under the reorganization plan, and the reorganization plan has been declared operative.

**RAILWAY LINK BETWEEN CENTRAL EMPIRES AND BULGARIA.**—The railway bridge across the Danube near Belgrade was solemnly inaugurated recently in the presence of German and Austrian military officers.